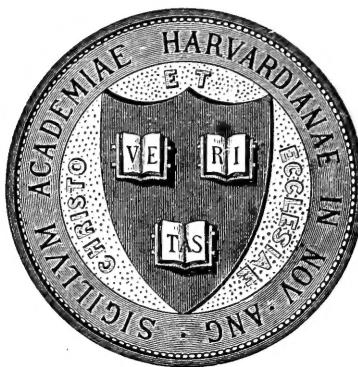


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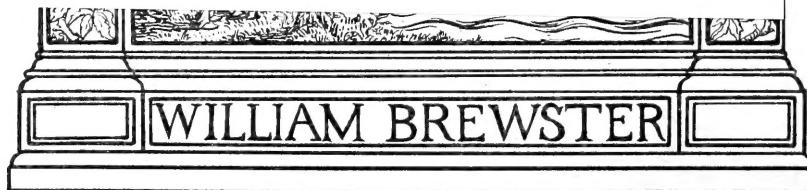
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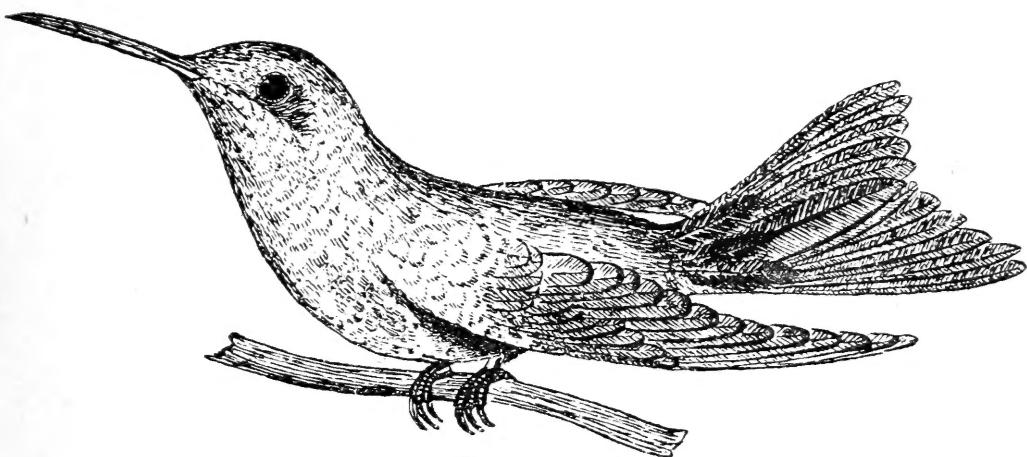
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD



Arinia Boucardi

VOLUME II, 1892

LONDON

A. BOUCARD, 225, HIGH HOLBORN, W. C.

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1892

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The Humming Bird.

**NEW SPECIES OF BIRDS AND INSECTS
Described in vol. II of THE HUMMING BIRD**

AVES

TROCHILI

Pages.

PHÆTHORNIS RUPURIMII, Boucard	1
HELIODOXA BERLEPSCHI, Boucard	75
HELIOTRYPHA SIMONI, Boucard	76
HELIANGELUS ROTSCILDI, Boucard	77
ERIOCNEMIS ALBOGULARIS, Boucard	78
CHLOROSTILBON SPECIOSA, Boucard	79
SAUCEROTTIA NUNEZI, Boucard	81
URANOMITRA COLUMBIANA, Boucard	82
PHÆTHORNIS PANAMENSIS, Boucard	83
HOMOPHANIA LAWRENCEI, Boucard	87

FORMICARIDÆ

FORMICIVORA STICTOCORYPHA, Boucard and Berlepsch	44
--	----

INSECTÆ

COLEOPTERA

CICINDELIDÆ

MANTICORA GRUTI, Boucard	45
------------------------------------	----

DIPTERA

ORNITHOMYIA GENICULATA, Bigot	49
---	----

**NEW SPECIES OF HUMMING BIRD, described
IN THE GENERA OF HUMMING BIRDS**

LOPHORNIS HAUXWELLI, Boucard	37
--	----

CONTENTS OF VOL. II.

DESCRIPTION OF A SUPPOSED NEW SPECIES OF HUMMING BIRD, in Boucard's Museum	1
THE WORLD'S FAIR, INTERNATIONAL EXPOSITION OF CHICAGO, 2, 13, 20, 32, 35, 46, 66, 88,	98
REVIEW OF NEW SCIENTIFIC BOOKS.	6
NOTES ON THE RARE PHEASANT RHEINARDIUS OCELLATUS.	9
BOOKS RECEIVED.	16
CELEBRATED GALLERY OF OLD MASTERS, OF THE LATE GENERAL MARQUESS DE GARBARINO.	17
CUSTOMS TARIFF OF GREAT-BRITAIN AND IRELAND.	19
OBITUARY.	24
BIOGRAPHICAL NOTES ON HENRY WALTER BATES F. R. S. etc., with portrait.	26
AMERICAN PEARLS.	33
FISH FROM VOLCANOES.	34
A VERY LARGE TREE.	34
A CURIOUS RAT-CATCHER.	39

The Humming Bird.

	Pages.
LIST OF BIRDS COLLECTED, BY MR HARDY AT PORTO-REAL, BRAZIL with description of one supposed new species, by Messrs Boucard and Count Berlepsch.	41
DESCRIPTION OF A SUPPOSED NEW SPECIES OF THE GENUS MANTICORA, « CICINDELIDÆ » from Damara Land, South Africa, by A. Boucard.	45
DESCRIPTION D'UNE ESPÈCE NOUVELLE DE DIPTÈRE PARASITE DE COSTA RICA, ORNITHOMYIA GENIC LATA, par M. J. BIGOT	49
THE COMPLETION OF THE PANAMA CANAL, BY A. Boucard.	50-57
A COMPLETE LIST, UP TO DATE, OF THE HUMMING BIRDS FOUND IN COLUMBIA, with descriptions of several supposed new species, by A. Boucard.	73
CHRISTOPHER COLUMBUS.	89
FESTIVITIES AND EXHIBITIONS, HELD IN HONOUR OF CHRISTOPHER COLUMBUS IN AMERICA, SPAIN, ITALY AND FRANCE	92-120
AMERICA, by A. Boucard.	105
LE CANAL DE PANAMA, by A. Boucard.	120
INTERNATIONAL EXHIBITION IN MONACO.	122
A NEW EMISSION OF POSTAGE STAMPS.	123
REVIEW OF NEW PUBLICATIONS.	123
ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, 1890-1891	124
CATALOGUE OF BIRDS IN THE BRITISH MUSEUM, Vol. XX, 1891.	124
CATALOGUE OF BIRDS IN THE BRITISH MUSEUM Vol. XVI, 1892.	124
CATALOGUE OF BIRDS IN THE BRITISH MUSEUM Vol. XXII, 1892.	126
ZOOLOGICAL RECORD, Vol. XXVIII, 1892	126
PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1892.	127
THE IBIS, Vol. IV, Sixth Series, 1892	128
MÉMOIRES DE LA SOCIÉTÉ ZOOLOGIQUE DE FRANCE, Vol. V, 1892.	129
MEMORIAS Y REVISTA DE LA SOCIEDAD CIENTÍFICA, ANTONIO ALZATE, 1892.	130
ACTES DE LA SOCIÉTÉ SCIENTIFIQUE DU CHILI. Vol. I, 1892.	130
THE ENTOMOLOGIST'S MONTHLY MAGAZINE, 1892	130
OTHER PUBLICATIONS RECEIVED	130
OBITUARY.	131
AUGUST VON PELZEN	131
DOM PEDRO D'ALCANTARA	132
M. ALPHAND	132
MONSEIGNEUR FREPPÉL	133
ARMAND DE QUATREFAGES DE BRÉAU	133
DUKE OF CLARENCE	134
HENRY WALTER BATES	24, 26, 134
ETIENNE ARAGO	134
HERMANN-CHARLES BURMEISTER	134
CARL-AUGUST DOHRN.	135
MARSHAL DA FONSECA	135
ERNEST RENAN	135
ALFRED TENNYSON	136
XAVIER MARMIER.	136
GENERAL OF HUMMING BIRDS, by A. Boucard.	1-56

VOL. II., No. 1.]

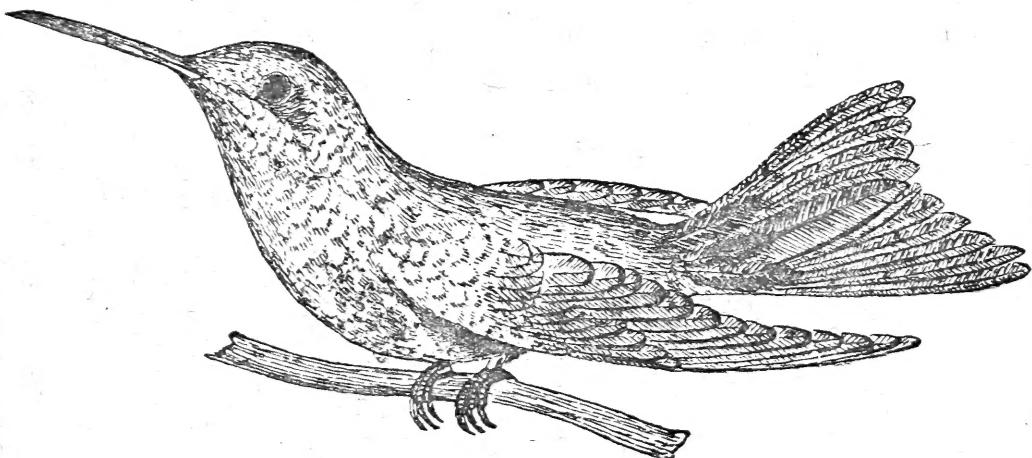
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Arinia Boucardi

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Henceforth *The Humming Bird* will be issued quarterly, on the first of March, June, September and December.

Each part will consist of 64 pages of text, at least, and when possible or advisable, plates will be issued.

In Volume Three, besides original articles on Science, Art, and Industry, will be continued the Genera of **Humming Birds**, and will commence the publication of a work, entitled : "**TRAVELS of a Naturalist in America**", by our Chief Editor, Mr A. Boucard, and prepared especially for this Journal.

Mr Boucard having spent many years in Mexico and in North Central and South America, a Record of his travels, adventures and discoveries in that wonderful Continent, will certainly prove of interest to the Readers of the Humming Bird.

In consequence of the increase of text, and plates, which we intend to issue during the year 1893, the price of each part cannot be fixed until issued ; but we are willing to receive annual subscriptions, including postage, at the following rates :

United Kingdom, Europe, Canada, and North America 10 shillings. Other Countries 12 shillings.

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NOTICE.

At the request of many Subscribers, I have determined to change the size of this Journal.

From the 1st January, 1892, it will appear in octavo form, a size more handy, easier to send by post, and to secure its arrival in good condition in the hands of Subscribers.

THE EDITOR.

Subscribers to Vol. II. are respectfully reminded that the price of subscription is now due.

Description of a supposed new Species of Humming Bird in Boucard's Museum.

PHAEOTORNS RUPURUMII, N.SP.

Male.—Upperside pale golden-green, brownish on head; upper tail-coverts, golden green with rufous edges. Throat black. Lines under and above the eyes, pale rufous, with lores and ear coverts black, forming a central black bar between. Breast, abdomen and flanks, pale greyish, tinged with pale rufous. Undertail coverts white. Median rectrices bronze-green, paler near the end, white tips; the next one of same colour but slightly darker, with white tips. The two next purple-black tipped white, the last of same colour, with edges near the point, and tips rufous. Wings purple-brown. Bill black. Lower mandible, flesh colour to a little more than half its length, rest black.

Total length, $4\frac{2}{3}$ in.; Wing, $1\frac{6}{8}$; Tail, 2; Culmen, 1.

Habitat, River Rupurumi, Brit. Guiana.

Type, in Boucard's Museum.

This pretty species of Phaethornis was discovered by Mr. Whitely during his last voyage, in the interior of British Guiana. It was killed the 31st of March, 1890, on the river Rupurumi. Its place is between *P. squalidus*, and *P. longuemarei*, but it is quite distinct of both species.

THE WORLD'S FAIR.

International Exposition of Chicago.

After all, it appears that the Americans have made their mind up to beat all preceding International Expositions. It is a fact that they are spending enormous sums to that purpose. It is stated that the expenses to be made reach already the enormous sum of six millions, seven hundred and forty thousand dollars, for the Exposition buildings only. In addition to that the company will have to spend another ten millions of dollars for the grading, filling, landscape gardening, viaducts and bridges, piers, etc., etc., so that the total amount is expected to reach, at least, the stupendous sum of seventeen millions of dollars.

Besides that, the States and Territories are expected to spend about three millions of dollars. Then come the foreign nations. Fifty-one have already accepted the invitation of the American Government, and the amount known to be spent by twenty-eight of them reaches the nice total of nearly five millions of dollars.

Thinking that the readers of the HUMMING BIRD will be glad to know how this gigantic industrial enterprise is going on, I will reserve a space in each number of Vol. II. of this Journal, in which I will give all the latest information about it.

It appears that the Americans want to celebrate the fourth hundredth anniversary of the discovery of AMERICA, by *Christopher Colomb*, in a manner which could not be surpassed.

THE EDITOR.

World's Fair Notes.

Virginia's building at the Exposition will be of the old colonial type, measuring 33 by 76 feet, two stories high and surrounded by a piazza, fifteen feet wide. Its cost will be \$20,000.

The nine Lady Managers resident in Chicago, called together by Mrs. Potter Palmer, have decided to establish a model sanitary kitchen in the Woman's building at the Exposition. An effort will be made by a special entertainment or otherwise, to raise the \$4,000 necessary for the purpose.

Dr. John E. Owen, the Medical Director of the Exposition, has promised Mrs. Potter Palmer that women shall receive official recognition upon the medical staff. The number to be appointed has not yet been announced, but assurance has been given that women physicians will professionally rank equal with men, and share the duties of the Exposition hospital.

The Hamburg-American Packet Company, of which Carl Schurz is the New York director, has subscribed \$5,000 to Exposition stock.

The Art Palace on the Lake Front Park, which will be built by the Art Institute, assisted to the extent of \$200,000 by the Exposition Company, will cost about \$700,000. The designs and plans of Shepley, Rutan & Coolidge, of Boston, have been adopted. During the Exposition the building will be used by the World's Congress Auxiliary for some of its numerous meetings.

California is the first state to respond to Chief Buchanan's request that each state contribute the trunks of three of its most characteristic trees, to be used in constructing a rustic colonnade for the Forestry building. California's contribution includes a sugar pine furnished by Towle Bros., Company, of Alta; a redwood, by J. F. Cunningham, of Santa Cruz; and a sequoia, by Smith Comstock, of Tulare.

The great imitation coast-line battle-ship, which is to constitute and contain the government's naval exhibit is in an advanced state of construction. It will be all inclosed before winter weather sets in, and all of the interior work will be completed by spring.

A World's Fair transportation company has been organised by a number of moneyed men in Maine for the purpose of transporting New Englanders to and from the Exposition and paying their expenses while in Chicago. It issues certificates payable in installments, and these, when paid up, are transferable for round trip tickets to the Exposition, including all necessary expenses.

The Carriage Builders' National Association, at its recent session in Cincinnati, appointed an influential committee to supervise the collection and preparation of a creditable exhibit of vehicles, and to co-operate with Chief Smith of the Transportation Department.

The State Board of Commerce, of Oregon, has employed canvassers to raise \$25,000 to be turned into the State's World's Fair fund.

E. R. L. Gould, the American delegate to the International Statistical Institute, recently held in Paris, writes to Chief Fearn saying that the congress has accepted an invitation to meet in Chicago in 1893.

The Quebec Steamship Company, operating the New York, Bermuda and West India Line, has agreed to bring government exhibits to the Fair free. Half rate is granted on the exhibits of individuals.

Quaritch, the noted London book-dealer, intends to send to the Exposition an autograph letter of Christopher Columbus, for which he paid \$5,000.

Thomas A. Edison, the famous electrician, has applied for 35,000 feet of space, or about one-seventh of all that the Electricity building contains. "I have it from Mr. Edison himself," said Chief John P. Barrett, "that his display at the Fair is to be the greatest achievement of his life. In talking of his application for space Mr. Edison admitted that he was asking for a large section of the building; 'but every inch will be put to good purpose,' he added. 'I shall not waste a foot of the area assigned to me, but will present a series of the most interesting electrical inventions ever produced.' I happen to know," Professor Barrett added, "that Mr. Edison is doing just as he says. He is making an almost innumerable list of novel and spectacular exhibits. Other electricians are not idle. We are already crowded for space in our building, and if the demand continues as it has begun I don't know how we will accommodate all the exhibitors."

Customs regulations for foreign exhibits to the Fair are being prepared by Assistant Secretary Spaulding, of the Treasury Department. These regulations are substantially the same as were asked for by the foreign commissioners who recently visited Chicago. Mr. Spaulding says that he has no doubt that the regulations will be found entirely satisfactory to foreign exhibitors.

The Agricultural Society of France has decided to offer a number of premiums for the best French horses shown at the Fair.

The number of intending exhibitors who have applied for space at the exposition reached 1,623 on Oct. 24. This is a much larger number than the Centennial had at a correspondingly early date. The number does not include any foreign applications, all of which are made to their respective national commissions.

Seventy-four cases of relics of the Indians and Mound Builders have been received by the Department of Ethnology of the Exposition from Chillicothe, Ohio. They contain a great variety of prehistoric implements and utensils, such as axes, arrow-heads, pipes, bowls, jars, etc. They were exhumed by a party acting under the direction of Chief Putnam.

One acre of ground within the Horticultural building has been reserved for an orange grove from Florida and the same amount for a grove from California. These trees will be brought to Chicago next year and planted, so that they will bear fruit while the Exposition is open. These two acres constitute two interior courts of the building.

The State of Idaho has applied for 10,000 square feet of space in the Mines and Mining building for a display of minerals.

Mrs. Potter Palmer is to drive the last nail in the Woman's building. The lady managers of Montana, at the suggestion of Mrs. J. E. Richards, are having the nail made of gold, silver and copper. It will be forwarded to Chicago as soon as completed.

Wisconsin's building at the Exposition will be 80 by 90 feet, three stories high, and of the Queen Anne style of architecture. Its cost is estimated at \$29,600.

Sir Henry Wood, the British Commissioner to the Exposition, who recently visited Chicago, has made a report to his government. The cable dispatches report that it is very elaborate, that it is about 10,000 words in length, and deals with a great variety of details concerning the Exposition. Subjoined to the report are plans and descriptions of the grounds and buildings, the regulations for installation, transportation, etc.; mail facilities, and other important data. In concluding his report, which is exceedingly favourable to the Exposition, Sir Henry Wood says that he has no doubt whatever of its ultimate success.

Florida's Exposition building will be a full-sized reproduction of Fort Marion, which was built at St. Augustine in 1620, and is believed to be the oldest building in the United States. It is of stone and covers a space of about 150 feet square. The walls are twenty feet high and nine feet thick at the base. It is a rectangular structure, the interior court being about seventy-five feet square. Within the fort are some twenty-four rooms. The reproduced structure on the Fair grounds will be frame, covered on the outside with the phosphate rock of Florida, to give it the appearance of stone. The walks on the parapet and within the inner court will be covered with the celebrated pebble phosphate of Florida. This use of the material will constitute the State's phosphate exhibit. The old fort is encompassed about with a deep moat. This moat will also be reproduced, and will constitute a sunken garden in which will be shown all the tropical plants of Florida—the pine-apple, banana, rice, sugar cane, oranges, etc. It is contemplated to partition off a portion of the moat and fill it with water and have there several alligators and, perhaps, crocodiles. Several of the old Spanish cannon that once did service at the fort will be taken to Chicago. The Florida building promises to be one of the most unique of the State structures.

NEW YORK, Dec. 19.—Messrs. Chance, of Birmingham, England, have notified the World's Fair authorities that they

are willing to erect a duplicate Eddystone lighthouse as a beacon light for steamers carrying passengers to the Fair. Invitations have been sent to famous men of letters of all countries inviting them to prepare contributions in prose and verse for the World's Fair congresses. It is hoped that Sir Edwin Arnold will write the hymn for the opening of the congress on religion. Contributions are also expected from Lord Tennyson, John G. Whittier, Oliver W. Holmes, and others.

The Council of the Society of Arts, which is the Royal British World's Fair Commission, after listening to the highly favourable report of Commissioners Sir Henry Wood and James Dredge, relative to their investigation of Exposition matters at Chicago, decided to appoint committees on finance, fine arts, Indian, colonial, engineering, manufactures, electricity, agriculture, mines and metallurgy, textile industries and transportation, and also a committee on women's work to co-operate with the Board of Lady Managers in Chicago. It also voted to invite the assistance of chambers of commerce and local committees throughout England.

(*To be continued.*)

Review of New Scientific Books.

A Handbook of the Destructive Insects of Victoria, with Notes on the Methods to be adopted to check and extirpate them.
By C. French, F.L.S., Government Entomologist. Part I. Melbourne, 1891.

This handbook, prepared by order of the Victorian Department of Agriculture is a practical and popular work, intended to be of much use to *Farmers, Orchardists, Vignerons, Horticulturists*, and all other persons interested in agriculture. The woodcuts and coloured plates, twenty-seven in number, have been executed by Mr. C. C. Brittlebank, of the Field Naturalist's Club, and the well known Melbourne firms of Messrs. Troedel and Co., and Messrs. Sands and McDougal. The printing of the letterpress, by the Government Printing Office.

A short introduction to Entomology is given. This has been taken from Miss Ormerod's well-known and valuable work, *A Manual of Injurious Insects*.

A brief account of the classification of insects has been taken from Professor Westwood's well-known work, *A Guide to Modern Classification of Insects*.

The First Part contains a systematic description, with an account of the noxious insects of the Colony, which attack apples, pears, apricots and cherries.

The fourteen coloured plates inserted in this part are very neat and well executed. They enhance greatly the value of the work.

I congratulate the authorities of the Victorian Department of Agriculture, Mr. Chas. French, and all those who have contributed to the preparation of this valuable hand-book, and I hope that the following parts will appear as speedily as possible.

I shall call the attention of the authorities of the British Museum (Department of Natural History) to this book, and I hope that they will soon follow the example given to them by the Canadian and Australian Colonies.

Mémoires de la Société Zoologique de France, T. iv. pp. 209-480, 1891.

CONTENTS:—*Résultats d'une excursion zoologique en Algérie*, by R. Blanchard. Concluded.

Faune des lacs salés d'Algérie, Ostracodes, by R. Moniez.

Stellérides nouveaux des campagnes du yacht l'Hirondelle, by Edmond Perrier.

Monographie des Francolins, by F. de Schaeck.

Etude de quelques paguriens recueillis par M. Jules de Guerne sur les côtes de France et de Norvège, by E. L. Bouvier.

Diptères nouveaux ou peu connus, by T. M. F. Bigot.

Notices helminthologiques, by Doctor Raphael Blanchard.

I will call the attention of Ornithologists to the excellent Monograph of the genus *Francolinus*, by Mr. F. de Schaeck, cited above.

This memoir of 120 pages, 272-392, begins with the geographical distribution of all the species of the Genus *Francolinus*, after which it continues by giving a full description of the internal and external characters of the genus, their habits, acclimatation, and classification, then follows a complete description of all the species known to date. Fifty-five species are described, but Mr. de Schaeck is of opinion that several species may turn out to be only local varieties or races. He thinks that many surprises are still in store for us, in the discovery of many new species, by future explorers.

Among the species described in this Memoir 49 are African, 1 from N. Africa and W. Asia, and 5 from S. Asia, Malay Archipelago, and Madagascar.

Histoire naturelle de la France, Oiseaux, by Emile Deyrolle, Paris, 1891.

This book on the Birds of France is profusely illustrated with woodcuts and 27 coloured plates representing the heads of 287 species. They are very good and especially so, when we

consider that this volume is offered to the public at the very moderate price of 5 francs, 50 centimes.

It is quite a revelation in printing.

The volume begins with an introduction, giving the names and a woodcut of all parts of bird. It follows with a method of skinning and mounting birds, after which comes the classification of the families and the description of all the species found in France. It is a pity that in the preparation of this volume M. Deyrolle did not ask the collaboration of a competent Ornithologist, because there are some things which may appear strange to modern Ornithologists.

To begin with, page 44 is a woodcut said to represent *Syrnium aluco*. Instead of that, it is a good representation of *Strix flammea*, which is again badly represented in page 46.

In the family of *PICIDÆ*, p. 49, he includes *Cuculidae*!

In the family of *ALCEDINIDÆ*, p. 57, he includes *Merops apiaster*, "Meropidæ," which has nothing to do with the former.

In the family of *GALLINACCÉS*, p. 168, he includes the *Pteroclidæ* and *Columbidæ*.

In the family of *ECHASSIERS*, p. 185, he includes all the families of the Orders *RALLI*, *HERODIONES* and *GRUES*, and several families of *LIMICOLÆ*.

In the last—that of *PALMIPÈDES*, p. 226, which he divides in six groups as follows:—*Totipalmes*, *Longues-Pattes*, *Becs-crochus*, *Becs-lamellés*, *Grandes Ailes* and *Plongeurs*, he includes the remaining families of *LIMICOLÆ*, and all the families of the Orders *PHŒNICOPTERI*, *ANSERES*, *PYGOPODES*, *IMPENNES*, *GAVIÆ* and *STEGANOPODES*.

It is regrettable, because this book has been prepared especially for the use of Schools in France. It would have been just as easy to make it, as excellent as it could be, so as to give to students an exact notion of Ornithological Science as it stands at the present moment.

Notions Générales et Pratiques sur les Musées Scolaires, by J. Touchet, Naturaliste, Saintes, 1883.

This pamphlet of 31 pages is excellent, and ought to be in the hands of every one interested in Natural History.

It starts with a description of what ought to be a Museum of Natural History for the use of children, and it follows with narratives on the origin of Collections, the size of a Museum and its arrangement, the exhibition of Collections of *Mammals*, and *Birds*, *Eggs*, *Fishes* and *Reptiles*, *Shells*, *Crustaceæ*, *Insects*, *Worms*, *Plants*, *Minerals*, etc.

M. J. Touchet seems to be quite at home on all these subjects, and I have been very interested with the contents of his pamphlet.

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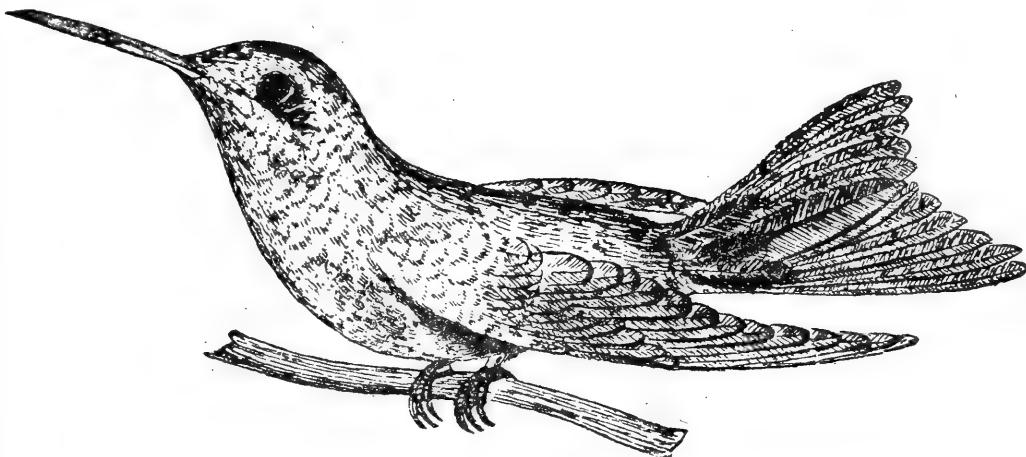
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC, AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



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The Humming Bird.

Notes on the rare Pheasant, *Rheinardius ocellatus*, Verr.

By A. BOUCARD.

In 1889, I met Captain Rheinard in the house of our mutual friend Mr. Anatole Maingonnat. In the course of an interesting conversation on Tonkin, that gentleman told me he had brought with him several long feathers used as head ornaments by the native chiefs of the interior of Tonkin.

I told him that I was very anxious to see them ; as I thought, by the description he made, that they ought to belong to a new species of the rare genus *Argus*.

Next day I was in possession of the said feathers, which I have still. No one, unless he be an enthusiast Naturalist like myself, can have an idea of the extreme pleasure I felt when these feathers were handed to me. There was one long feather about three feet long, and several smaller ones. I thought at once of a magnificent new species of *Argus*, and told so to Captain Rheinard, insisting upon him to do all what he could to procure as many specimens as possible, as I was certain that it should prove one of the greatest ornithological discoveries of this century.

As he was returning to Tonkin a few days after, I made an appointment with him for the next day, and I went at once to the Library of the Jardin des Plantes, where I asked for the beautiful Monograph of *Phasianidæ*, lately edited by D. Elliot. At once, I found in that magnificent work one coloured plate figuring some feathers, the property of the French Museum of Natural History, which undoubtedly belonged to the same species as those which I had with me. It was at the same time a great pleasure and a great disappointment, seeing that the bird had already a name given, that of *Argus ocellatus*, Verr. Nevertheless, I thought what a grand thing it would be to have the bird. So the next day, when I met Captain Rheinard, I told him what I had discovered about the feathers, and told him to procure the bird by all means.

It was agreed between us that he should try to get as many as he could, and to send them to Mr. Maingonnat for me.

Two years after, at the end of June, 1882, returning from the Riviera, where I had passed the winter, I was quite surprised to learn that Mr. Maingonnat had received from Captain Rheinard one specimen of the bird and that he exhibited it at the meeting of the Zoological Society of France on the 12th of June, 1882, giving it the name of *Argus Rheinardi*.

A few days after, I was at Mr. Maingonnat, and he confirmed me what I had heard. I was quite vexed at the time, as it was a well understood thing between Messrs. Rheinard, Maingonnat and myself that I should describe this bird if Captain Rheinard could get it.

But the thing being done, I could not help it; but when I saw the bird, I said immediately to Mr. Maingonnat that it was not an Argus, but an extraordinary form of Pheasant between *Pavo*, *Argusianus*, and *Phasianus*, and I suggested the name of *Rheinardia ocellata* for the bird, a name still more honorific for the discoverer of this magnificent species. Mr. Maingonnat took the hint at once, and without any more advice of mine he made a poor description of this new genus in *La Science pour tous*, July, 1882, p. 210, under the name of *Rheinardia ocellata*.

The skin from which the description was taken by Mr. Maingonnat was sold by him to the Paris Museum for 2,000 francs.

A little while after, another male specimen was sent by Captain Rheinard, then French Resident in Tonkin, and was offered by him to the Paris Museum.

In 1883 Capt. Rheinard sent six more specimens, among them one female, which I believe is still unique and undescribed. It is now in the collection of the British Museum. Of these six specimens, one male and one female are exhibited in the Ornithological Gallery of the British Museum, where they show extremely well. One male specimen is in the Museum of Natural History at Lyon, France. Another male specimen is at the Museum of Natural History of Saint Omer, Pas de Calais, France, whose collections have increased wonderfully under the direction of Mr. Ch. Van Kempen. The other two, also males, are now the property of the Honourable Lionel Walter de Rothschild.

Since 1883, although I have offered a good price for some more specimens, I have been unable to get one.

Mr. E. Oustalet in a pamphlet, which I possess, having for title *Description du Rheinardius ocellatus, Gallinacé voisin des Argus*, has given a very good description of the bird, taken from one of the specimens in the Paris Museum.

In this pamphlet he states that Mr. D. G. Elliot is the first author who mentioned the difference between the feathers of this bird and those of *Argusianus gigantus*.

I quite agree with him, as I consulted that plate myself, and it is due to it that I was able to identify the feathers brought by Capt. Rheinard in 1880; but I am in doubt about the name which must be selected as the author of the species.

I will be greatly obliged to modern Ornithologists to give me their opinion about it.

Now I will give the description of a fine male specimen of my Collection, now the property of the Hon. Lionel Walter de Rothschild.

Rheinardius ocellatus, Verr phœnix?

Argus Rheinardia, Maing. *No description.*

Rheinardia ocellata, Maing Sci. pour. tous. July, 1882,
p. 210.

Rheinardius ocellatus, Oustalet.

Habitat Buih-Dinh (Tonkin).

Male—Head black, Lores pale silvery white, under which runs a black line. Ear-coverts nearly black. Crest blackish in front, then dirty rufous, then silvery white. It is over two inches high. Chin silvery white. Throat deep rufous, paler near the chin. Upper and under surface black covered all over with small irregular white and pale rufous spots, dark on back, lighter on wing-coverts, and reddish-brown on breast, abdomen and flanks. The median rectrices are four feet long, and five inches wide at base, terminating gradually at a point. Lateral are also very wide at base, but generally shorter, the last being scarcely over one foot and a half long, all of them terminating to an acute point. The colour of the median rectrices is slate coloured in centre, somewhat darker on each side, profusely covered all over with conspicuous round silvery white spots, intermixed with irregular rufous ones. Along the shaft, to the two thirds of its length, there are two rows of white ocellated rufous spots, black in centre. These gradually disappear. The lateral feathers, which are of a darker colour, are marked in a similar way, and the round spots are pale rufous instead of silvery white, the ocellated spots along the shaft and the irregular spots between are also darker. All the tips are black. Bill, flesh colour at base, then yellow. Legs, flesh colour.

Total length, 5 feet. Wing, 1-2 ineh. Tail, 4 feet. Culmen, 2 inches.

This remarkable species inhabits temperate countries at

an altitude of about 1,000 feet ; but it is probable that it is also found in warm climates.

It frequents the densest forests, and is a very wild bird. Hence the difficulties of getting specimens. In nuptial season, February—April, they pair and are seen occasionally in the glades of the forest. It is the best time to get at them. It lays only two eggs, pure white, larger than a hen's egg and longer in shape. Some of these, hatched by a hen, were fifty days to come out.

The young are quite familiar and can be easily domesticated. I have been told that even adults caught in traps are sometimes domesticated. What a splendid game it would be if it was imported to Europe !

Its cry resembles somewhat that of the Peacock, but is more harmonious. When on the soil, it is with the greatest difficulty that the male can take its flight, in consequence of its long tail. The wild natives of the interior of Tonkin, well aware of that fact, catch them by running after. It gets tired quickly enough, and is easily secured. Females are much more difficult to obtain, as they can take their flight easily. They live on Insects, Reptiles, and probably Seeds and Fruits. In the oesophagus of one of the birds sent to Europe frogs and toads have been found.

The wild natives hunt them a great deal when they are in full plumage, and put a great value on the long tail-feathers, which are used as a head-dress ornament by their chiefs. I don't know if they eat the flesh, but it is probable, as it must be delicious. According to Captain Rheinard, it is with the greatest difficulty that he could procure the specimens he sent to Europe.

All the above informations were given by those who procured the specimens for him. In my opinion, it is very likely that this bird is the fabular *Phœnix*, a bird well known to the Chinese from the remotest time. My authority for saying so is that I have seen many drawings on pieces of furniture, on table carpets and other clothes, and on earthenware from China and Japan, which agree entirely with the general facies of this bird. In that case its proper name should be *Rheinardius phœnix* !!

Science is greatly indebted to Captain Rheinard for the discovery of this magnificent bird.

THE WORLD'S FAIR.

Royal Commission for the Chicago Exhibition, 1893.

THE COUNCIL OF THE SOCIETY FOR THE ENCOURAGEMENT OF
ARTS, MANUFACTURES AND COMMERCE.

Under date of the 27th August, 1891, Her Majesty was pleased to issue a Commission to the Council of the Society of Arts, authorising them to act as Commissioners for the Universal Exhibition, which, pursuant to an Act of Congress, and in accordance with a Proclamation made by the President of the United States of America, will be held at Chicago from May 1st to October 30th, 1893.

The Royal Commission are now prepared to receive applications from Artists, Manufacturers, and others desirous of taking part in the Exhibition, to afford them all necessary information, and to offer them all available facilities which they may desire for this purpose.

Such applications must be made upon forms to be obtained from the Secretary of the Commission at their Offices, Society of Arts, John Street, Adelphi, London, W.C. They must be sent in properly filled up, not later than February 29th, 1892, and addressed to the Secretary as above.

As the funds granted by H. M. Government will not suffice to defray all the expenses of the Section, it is necessary that they should be supplemented by payments from the Exhibitors. A charge will therefore be made to each Exhibitor, based on the amount of space occupied, and calculated on the following scale:—

				Per sq. ft.	
					s. d.
For spaces not exceeding 100 sq. ft.			...	...	5 0
For spaces exceeding 100 sq. ft. and not exceeding 200 sq. ft.			4	6	
"	"	200	"	300	4 0
"	"	300	"	500	3 6
"	"	500	"	750	3 0
"	"	750	" and upwards	...	2 6

The minimum charge will be £5.

It is not expected that the total receipts from all sources will more than suffice to defray the cost of an adequate representation of British Industry; but should there be a sufficient surplus after the payment of all the costs of the Section, the Royal Commission will refund the balance *pro rata* with the amounts contributed by the several Exhibitors. The amount produced by the payments of Exhibitors will therefore

be treated as a guarantee fund, to be expended if necessary, but if not, to be refunded to the contributors.

The Exhibition is situated in Jackson Park, within the southern limits of the city of Chicago. The principal buildings are devoted to the following main divisions:—(1) Fine Arts; (2) Manufactures and Liberal Arts; (3) Agriculture; (4) Machinery; (5) Electricity; (6) Mines; (7) Transportation; (8) Horticulture. In all these, space has been allotted to Great Britain, though it is expected that the principal British Court will be that in the Building of Manufactures and Liberal Arts, since the privilege has been conceded to this country of massing all or most of its exhibits together, should such a course prove desirable.

Exhibitors' goods will be transmitted direct in bond to Chicago, where the usual Customs examination will be made. Goods for exhibition only will not be liable to Duty, but on goods sold the usual rates will have to be paid. Goods can be sold in bond, at prices independent of the tariff, the duties being payable by the purchaser.

The American Railroad Companies propose to carry goods back from the Exhibition free, charging the usual rates for the outgoing journey. These rates, it may be noted, are low in comparison with those usual in European countries. It is hoped that special terms for Exhibition goods traffic may be obtained from the Atlantic Steamship Companies. Full information as to routes, traffic, rates, &c., will be provided in due course.

A general Official Catalogue will be published in English, French, German, and Spanish. A special catalogue will also be published for the British Section.

Exhibitions of Live Stock will be held, and Prizes will be offered in connection with them. A special circular has been issued, giving information about these.

A limited quantity of steam and water power will be supplied gratuitously. Further supplies will be provided at a fixed rate. Countershafts, pulleys, belts, &c. must be provided by the exhibitor. Application for motive power must be made on special forms which will be supplied on demand.

The general reception of articles at the Exhibition Buildings will commence on November 1, 1892, and no articles will be admitted after April 10, 1893. Foundations for heavy machinery may be put in, and special constructive work commenced, as soon as the state of the ground and the buildings permits.

Special regulations will be hereafter issued for the organisation of the International Juries.

The Royal Commission are informed that the contract labour laws of the United States will not prevent Exhibitors

from importing foreign labour, or from entering into binding contracts with their employés. Further information on this head will be supplied on application.

Every person who becomes an exhibitor in the British Section thereby agrees to be governed by the rules and regulations laid down by the Exhibition Executive, or by the Royal Commission through its Executive Officer.

World's Fair Notes.

W. A. Alexander and Louis Gelder, representing the insurance associations of Chicago, have asked for space, 50 by 100 feet, to construct a building at the Fair to constitute an exhibit of the most improved methods of fireproof construction and the appliances used in saving goods from burning buildings. The building, it is urged, can be occupied by a salvage corps during the Fair.

One of the interesting exhibits from Montana will be a relief map of Butte, the greatest mining camp in the world. It is reported that Montana's appropriation of \$50,000 will be doubled at the next session of the legislature.

A splendid exhibit from Australia seems assured. Minerals, education, forestry and especially wool are to be represented. Wool growers and wool brokers, to the number of fifty, met recently in Sydney, New South Wales, and took steps to make at the Exposition a very extensive collective exhibit of wools. New South Wales has selected its commission to the World's Fair.

William Ordway Patridge, the great sculptor, has asked for space in the Art Palace for his statue of Shakespeare, which he is now making for Lincoln Park. His statue of Alexander Hamilton, which he is making for the City of Boston, will also be shown. Mr. Patridge is vice-president of the American Artists' Association in Paris. He gives assurances that the association is heartily interested in the Exposition.

Leigh Lynch has been commissioned by Director-General Davis to visit the South Sea Islands in the interests of the Exposition.

The Chicago Paper Trade Club, which includes the prominent manufacturers and dealers in paper in Indiana, Illinois, Michigan and Wisconsin, has decided to make the best exhibit of paper manufacturing and its machinery and appliances ever held under one roof. The display will show the actual manufacture of paper in all grades from wood pulp to the highly finished book, and the exhibit will be conducted every day during the time of the Exposition. The finished product is to be run through a perfecting press and printed and sold as a souvenir.

Mr. Sell, the London advertising agent, has applied for space to exhibit specimens of all the leading newspapers of the world which have been printed during the last two centuries.

The Exposition Committee on Electricity has decided that the names of the following electricians shall appear over the entrances of the Electricity Building: Franklin, Galvani, Ampère, Faraday, Sturgeon, Ohm, Morse, Siemens, Davy, Volta, Henry, Oersted, Coulomb, Ronald, Page, Weber, Gilbert, Davenport, Soemmering, Don Silva, Arago, Daniell, Jacobi, Wheatstone, Gauss, Vail, Bain, De la Rive, Joule, Saussure, Cooke, Varley, Steinheil, Guericke, La Place, Channing, Priestly, Maxwell, Coxe, Theles, Cavendish. It was concluded best not to honour thus any electricians who are now living.

Mr. Takahira, Japanese Consul-General in New York, who was specially commissioned by the Mikado to look into Exposition matters, has made a formal application to Director-General Davis, for 124,100 square feet in the several buildings on the Midway Plaisance, as follows: For an official Japanese building, 40,000 square feet; in the Manufacturer's building, 35,000; Agricultural building, 4,000; Fine Arts, 2,000; Mines and Mining, 750; Forestry, 350; Bazaars, 42,000. Mr. Takahira was formerly secretary of the Japanese legation at Washington and speaks English fluently. He says the Japanese are greatly interested in the Exposition and will soon make a very large appropriation for participation.

Books Received.

The Antigua Observer; The Kansas City Scientist; The Ornithologist and Botanist, Binghamton, New York; *Revista italiana di scienze naturali e Bollettino del Naturalista*, Siena; *Pearson's Weekly*, London. In this last journal, one column is exclusively devoted to Natural History, Notes and Queries. In number 75, ending December 26, 1891, there are several interesting articles on Natural History, *A curious rat-catcher*, *Fish from Volcanoes*, etc.

Index Generum Avium. A list of the genera and subgenera of birds, by F. H. Waterhouse, Librarian to the Zoological Society of London, 1889.

This alphabetical list of about 7,000 generical names employed by various authors, with references to places and dates of their publication, is quite indispensable to Ornithologists. It will assist greatly the labours of working Scientists, and I congratulate heartily Mr. F. H. Waterhouse for the compilation of such a useful book.

THE EDITOR.

**PRICE LIST of Utensils necessary for the
collecting of Mammals and Birds' Skins,
Reptiles, Fishes, Insects, Shells, &c., &c.**

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Pocket corked Box,	from 1/-	
Corked Box for Museums	24/-	doz.
" "	and glazed, splendid make.	36/-	"	
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" with 1000 pins...	...	3/-		
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Boucard's tin collecting box with two partitions	2/-			
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Pill boxes for ditto	„	4/- gross.	
Flax	„	6d. per lb	
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Fishing rods with accessories	from	„	„	2/-	
Dredge for collecting shells, &c.	...	„	„	40/-	
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VOL. II., No. 3.]

MARCH, 1892.

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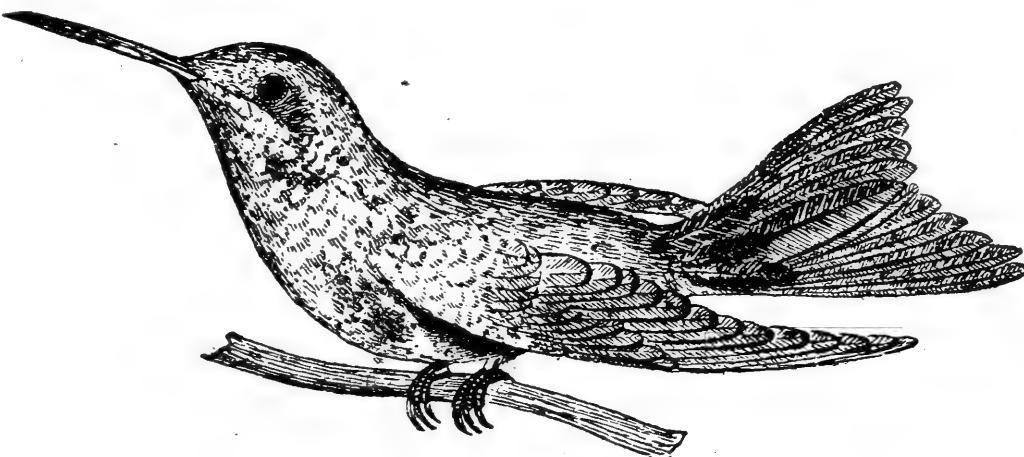
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC, AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



Arinia Boucardi

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The Humming Bird.

ART.

Celebrated Gallery of Old Masters of the late General Marquess de Garbarino.

This is a small gallery, but I think that it can compare with any. It consists only of thirteen paintings, but all of them are gems.

The first is a *Masaccio*, celebrated Italian painter, born in 1401 at Valdurno, and died at Florence in 1443. It represents the *Wedding of the Virgen*. According to Marquess Garbarino, it comes from the Royal Gallery of Madrid, where his uncle André de Montebruno, a great expert and collector of paintings, then a General in the service of Napoleon the First, bought it, after the conquest of the capital by the French army. It is signed *Opus Masaccio, 1435.*

In this painting can be seen the coat of arms of *Cardinal de Monti*, who during the fifteenth century was sent as Nuncio to Spain. It is probable that it was given to the King of Spain by his Holiness the Pope, or by the Cardinal himself. It is the finest and the best preserved *Masaccio* existing.

The subject of the second, which is not inferior to the first, but even more exquisite in design, and antiquity is a *Presentation to the Temple*, by the most illustrious painter *Raphael d'Urbino*. His master Perugino has also worked on it.

This magnificent masterpiece was bought in 1815 by General Montebruno, from the parson of the noble church of Prince's Larmarmora, at Biella, Piedmonte. Money was wanted to rebuild the roof of the church, hence the sale of this picture to the General. The painting was formerly on wood, and from old age it was decaying, when the painter *Merani* of Genoa saw it and convinced the father of the late Marquess to have it restored. It was an easy work being painted on canvas called *peaud'œuf*. It was transposed on a new canvas with all the perfection desired. The third painting on wood is from *Leonardo da Vinci*, one of the most celebrated painters of the fifteenth century, 1452—1519.

It represents *Santa Catarina with her wheel*. If you look at it carefully, the eyes of the Saint seem to be life-like

and staring at you. It is one of the fine paintings of that distinguished artist.

The fourth is an handsome painting by *Giulo Pipi*, known also as *Jules Romain*, celebrated Italian artist of the 15th and 16th centuries, 1492—1546. It represents the *Lapidation of St. Etienne*. These four paintings are the most precious of the gallery and are worth a princely fortune.

The other nine are two *Holy Families* on wood by *Gian Bellini*, celebrated painter of the 15th and 16th centuries. *Giorgon*, *Titien*, and *Sebastian del Piombo*, were among his pupils.

Two Portraits by the celebrated Italian painter, *Andrea del Sarto*, known also as *Andrea Vannuchi*, 1488—1530.

Les Epousailles de Jésus, enfant, by *Sodoma*, 1479—1554, or his pupil *Cesare de Cesto*.

One *Holy Family* by *Quand Juannes*, celebrated Spanish master. This painting is very fine and looks like enamel. It is round and on wood.

The Descent of Jesus from the Cross, attributed to *Mantegna*, celebrated painter of the 15th and 16th centuries, 1403—1506.

Agar by *Correggio*, 1494—1534. It was taken or bought by General Montebruno, from the Napoli Gallery, when the French conquered that place. It is very fine and painted on wood.

The thirteenth and last is from *Gaudensio Ferrari*. It represents *St. Jérôme in the Désert*. It is one of the best of that master. All the above paintings are more or less masterpieces and there is not a gallery in the world where they should be misplaced. If they were exhibited in London or in other capitals, I have no doubt that thousands and thousands of visitors would pay willingly a good entrance fee to be able to admire them; but unfortunately the family, although willing to sell, is adverse to an exhibition. Any one of the four principals by itself would attract great crowds in London or elsewhere.

Measures of the paintings :—

		Personages.		French measure. Mètres.	
				Height.	Width.
MASACCIO	on wood	.. 11 half nat. size	..	1.63	1.30
RAPHAEL	on canvas	.. 5 , , , ,	..	1.28	1.29
LEONARDO	on wood	.. 1 , , , ,	..	0.64	0.52
GUILO ROMANO or Pipi	,,	.. 10 , , , ,	..	1.21	1.13
GIAN BELLINI	,,	.. 3 , , , ,	..	0.45	0.51
,,	,,	.. 4 , , , ,	..	0.34	0.45
ANDREA DEL SARTO	,,	.. 2	..	0.65	0.51
,,	,,	.. 1	..	0.54	0.41
SODOMA o C. DA S.	,,	.. 5 half nat. size	..	0.89	0.89
QUAND JUANNES	,,	.. 2 nearly full size	..	0.64	0.64
CORREGGIO	,,	.. 2 small size	..	0.51	0.42
GAUDENZIO FERRARI	on canvas	.. 1 full size	..	1.54	1.18

Amateurs willing to purchase *this unique Gallery, or part of it*, are requested to communicate immediately with *Mr. A. Boucard, Editor of the Humming Bird, 225, High Holborn, London, W.C.*, who has instructions for the disposal of same, and can supply all particulars about it.

Photographs of the paintings can be seen at the above address, *by appointment only*.

INDUSTRY.

Customs Tariff of Great Britain and Ireland.

Now that so many countries in Europe and elsewhere have gone back to protective tariffs, *prohibitive in many instances*, I think it will interest the readers of the HUMMING BIRD to be able to compare the said tariffs with the English. It is noteworthy that England is the only one important country in Europe who has not altered its tariff, and I think that it is the only country which understands its own interests best, and it is not necessary to be a prophet to say that in the long run, the advantages of such a system will be in favour of that country.

In England, less than twenty varieties of goods pay import duties, and none pays export duties. Hence the immense shipping of goods to England, and making all other countries its tributaries.

Not only I hope that England will not follow suit with the European and American countries which have raised their tariffs; but I expect that at an early date, it will do away altogether with the Customs tariffs, and I firmly believe that if such a thing may come to pass, the prosperity of England will increase considerably yet.

A. B.

Ordinary Import Duties.

			£	s.	d.
COCOA	...	...	per lb.	0	0
Husks and shells	...	...	per cwt.	0	2
Cocoa or Chocolate Ground, Prepared or in any way Manufactured	...	...	per lb.	0	0
COFFEE, RAW	...	...	per cwt.	0	14
Kiln-dried, Roasted or Ground	...	...	per lb.	0	0
FRUIT, DRIED.					
Currants, Figs, Fig Cake, Plums not preserved in Sugar, Prunes and Raisins	...	...	per cwt.	0	7
TEA	...	...	per lb.	0	0
Tobacco	...	...	
Unmanufactured, Stemmed or Unstemmed, containing in every 100 lbs. weight thereof 10 lbs. or more of moisture	...	...	per lb.	0	3
Ditto, containing less than 10 lbs. of moisture	...	...	per lb.	0	3
Manufactured:—					
Cigars	...	...	per lb.	0	5
Cavendish or Negrohead	...	...	per lb.	0	10
Snuff, containing in every 100 lbs. weight thereof more than 13 lbs. of moisture	...	...	per lb.	0	4
Not more than 13 lbs. of moisture	...	...	per lb.	0	4
Other Manufactured Tobacco and Cavendish or Negrohead Manufactured in Bond from Unmanufactured Tobacco	...	...	per lb.	0	4
WINE.					
Containing less than 26 degrees of Proof Spirits	...	...	per gallon	0	1
Containing 26 and less than 42 degrees of Proof Spirits	...	...	per gallon	0	2
With an additional duty of 3d. per gallon for every degree of strength beyond the highest above specified.					

Import Duties to Countervail Excise Duty upon British Beer.

	£ s. d.
BEER and ALE, the Worts of which were, before fermentation, of a specific gravity of 1,057 degrees	... per barrel of 36 gallons. 0 6 6
And so on in proportion for any difference in gravity.	

BEER, RUM, and SPRUCE.

The Worts of which were, before fermentation, of a specific gravity :	£ s. d.
Not exceeding 1,215 degs.	... per bbl. of 36 gallons. 1 6 0
Exceeding 1,215 degs.	... " " 1 10 6

Import Duties to Countervail Excise Duty upon British Spirits.

	£ s. d.
SPIRITS and STRONG WATERS.	
Rum, Brandy, Geneva, and Unenumerated Spirits	... per proof gall. 0 10 4
Liqueurs, Cordials or other preparations containing Spirits, in bottle, not tested for strength	... per gall. 0 14 0
Perfumed Spirits and Cologne Water	... " 0 16 6
CHLOROFORM	... " 0 3 0
CHLORAL HYDRATE	... " 0 1 3
COLLODION	... " 1 4 0
ETHER, Sulphuric	... " 1 5 0
ETHYL, Iodide of	... " 0 13 0
NAPHTHA, purified so as to be potable	... " 0 10 4
SOAP, TRANSPARENT, in the manufacture of which Spirit has been used	per lb. 0 0 3
VARNISH, containing Alcohol	... " 0 0 3
<i>See Spirit Duties.</i>	

Import Duties to Countervail Excise Duty on British-made Articles.

	£ s. d.
PLATE, GOLD	... per oz. Troy 0 17 0
,, SILVER	... " 0 1 6
PLAYING CARDS	... per "doz. packs 0 3 2

CHICAGO EXPOSITION.

World's Fair Notes.

More than one and one-half million pounds of steel and iron will enter into the construction of the Mines and Mining Building.

The Royal Agricultural and Commercial Society of British Guiana has decided to hold a local exhibition of its resources preliminary to the display it intends making at Chicago.

The imitation battleship "Illinois," at the naval pier, in the Exposition grounds, is now rising from the water. Work is progressing satisfactorily on the hull. The deck will measure over all 348 by 69 $\frac{1}{2}$ feet. The structure is to cost \$100,000 and is the most original illustration of naval architecture ever worked out.

A company has been formed, embracing several very wealthy men, to inaugurate and operate in Chicago a permanent circus after the style of the Hippodrome in Paris. A building, with seating capacity of 5,000, and having a

garden on the roof, will be erected, and the attraction will be in operation to entertain World's Fair crowds.

Charles W. Rolfe, of the Illinois University, at Champaign, has been elected to take charge of the relief map of Illinois, which is to be a part of the State exhibit. He will be assisted by a corps of ten engineers, who will go in the field soon. The map is to be made on a scale of one inch to three miles. It will be six by ten feet and cost \$15,000.

One of the largest bicycle factories in America has written to Chief Smith, of the Transportation Department, that it will exhibit at the Fair "bicycles and tricycles of every style of the trade, showing the rise and progress of the art of making 'wheels,' from the first 'bone shaker' built in this country up to the highly finished 'safety' of the present day."

Chief Ives of the Art Department, now in Europe, writes most encouragingly concerning the prospects of the Art exhibit of the Exposition. He has conferred with artists and art societies in many of the principal cities of Europe and has found them greatly interested in the Exposition, and anxious to send paintings and other art productions for exhibition. He reports his success much greater than he anticipated.

A stock company with a capital of \$100,000 has been formed to place a paper exhibit at the Columbian Exposition. Every American paper maker or American manufacturer of paper-making machinery will be allowed to take stock. The entire capital has already been secured, but the pledges will not be called for until the outsiders have been given a chance, in order to do away with any idea of a money-making scheme. A Committee of Five has been appointed by President M. J. Fitch to take the matter in hand and to send a representative to the meeting of the Boston Paper Trade Club on the third Wednesday in November.

All of the restaurants in the Mines and Mining and Electricity buildings will be in the galleries. This was determined in order to leave the ground floor free as far as may be for intending exhibitors. It is thought also that restaurants on the second floors of the buildings would prove an attractive feature. It was also decided that the restaurants in the Electricity building be located in the two bays at the north end of the hall. In each bay there is to be one large dining-room, surrounded by several smaller rooms twenty-three feet square. The balcony connecting the two is to be fitted up for serving temperance drinks and ices. In the great Manufactures Building about 40,000 square feet have been set apart for restaurants.

The President of Uruguay has designated the Association Rural of that country as the National Commission to have charge of Uruguay's exhibit at Chicago in 1893.

Vilmorin & Co., of Paris, who made the largest horticultural exhibit at the Paris Exposition, have had a representative in Chicago conferring with Chief Samuels and perfecting arrangements for making a similar exhibit at the World's Fair.

A 10,000 dollar model of a stamp mill for reducing copper, now the property of the State Museum of Michigan will be shown at the Fair. This model was made and presented by the Calumet and Hecla Copper Company.

The Atlantic Transport Company, operating a line of steamers between London and New York, has agreed to carry exhibits from London to either New York, Philadelphia or Baltimore free of charge, except the actual expenses of loading and unloading. This generous proposition makes it possible for European exhibitors to have their displays brought to the American sea-board practically free of charge.

The budget committee of the German Reichstag has voted a World's Fair appropriation of 900,000 marks, or \$214,200.

Chief Putnam, of the Department of Ethnology, has thirty agents in North, Central, and South America, collecting material for the Ethnological exhibit.

One hundred and twenty car loads of glass, enough to cover twenty-nine acres, will be used in the roofs of the various Exposition structures. More than forty-one car loads, or eleven acres, will be required by the great Manufacturers Building alone.

Edison's electrical exhibit at the Exposition will represent an expenditure of something like \$100,000.

The women of Texas have organized a State World's Fair Board of Lady Managers, with an executive committee of thirty-one, and Mrs. Wm. H. Tobin, of Austin, president and Mrs. Sidney Smith, of Dallas, as secretary.

The London and North-Western Railway will send to the Exposition an exhibit illustrating the English railway system.

The Austrian Government has postponed, until 1894, the International Jubilee Art Exhibition, so that it will not interfere with the World's Fair.

The Exposition Commission, which will visit the countries of Southern Europe and Northern Africa, is composed of

Ex-Secretary of State Thomas F. Bayard, Vice-President Thomas B. Bryan, National Commissioner James Hodges, of Maryland, and Director H. N. Higinbotham.

A miniature model of the town of Pullman, 30 by 80 feet, will be a part of the exhibit made by the Pullman Palace Car Company.

The Queen Isabella Association has requested space in the Exposition grounds, near the Lake, for the statue of Queen Isabella, which Harriet Hosmer is making, and also space for a building.

The contract for the construction of the Illinois State Building at the Exposition has been let to William Harley & Son, for \$195,800. This does not include statuary work and interior decoration. The total cost is expected to reach \$275,000 or more.

The validity of California's World's Fair appropriation of \$300,000 has been affirmed by the State Supreme Court.

Philadelphians are discussing the question of exhibiting at the Exposition the mammoth bronze statue of William Penn, which is to surmount the tower of the Quaker City's new city hall. The statue is thirty-seven feet high, and of such monster proportions that a man could ride a horse around the rim of Penn's hat. It is proposed to have the statue a part of the official exhibit of Philadelphia.

About ten million pounds of iron will be used in the construction of the gigantic Manufactures Building. The Edgmore Bridge Company, of Wilmington, Del., was awarded the contract at a price which will bring the aggregate amount up to \$460,000.

Princess Christian, third daughter of Queen Victoria, has been chosen President of the English Committee on Women's Work for the World's Fair.

Several merchants of Smyrna have asked for 1,000 square feet of space in which to exhibit the finest specimens of Turkish rugs and carpets.

The Baltimore and Ohio railroad proposes to make an exhibit showing the progress of its development from a primitive tramcar to a fully equipped railway.

The headquarters of the Texas World's Fair Association have been moved from Fore Worth to Waco, and changes have been made in its officers. Pres. T. J. Hurley has resigned, and has been succeeded by Col. H. B. Andrews of San Antonio. Col. R. B. Parrott of Waco was elected to succeed Col. Andrews as Vice-President. Hon. Frank R. Lubbock, ex-Governor and ex-Treasurer of the State, has become the financial agent of the Association, and will

canvass the State to assist in raising the \$300,000 desired. Nineteen Texas architects submitted plans for the Texas building, and the best five of the plans have been forwarded to the Exposition Construction Department at Chicago.

Pennsylvania's World's Fair Board has appropriated \$1,000, to be distributed in premiums in the Agricultural and Live-Stock Departments of the exhibit from that State.

The Michigan State Horticultural Society intends to exhibit a peach orchard in full bearing.

The project of establishing a Columbian Memorial Museum, which shall be a permanent attraction and which, it is expected, will be given many thousands of curios and other objects exhibited at the Exposition, is being warmly supported by a number of Exposition officials and others.

It is announced that within thirty days the tearing down of the old Inter-state Exposition building on the Lake Front in Chicago will begin. On its site will be erected a permanent Art Institute building costing \$600,000 or more. The Exposition authorities contribute \$200,000 of this amount, and during the Exposition the structure will be utilized for some of the meetings provided by the World's Congress Auxiliary.

Miss Alice Rideout, of San Francisco, has won the distinction of having submitted the best designs for the statuary which is to adorn the Woman's Building. She submitted three designs in plaster, representing respectively "Woman's Virtues," "Woman as the Spirit of Civilization," and "Woman's Place in History." The first and last groups will stand free above the attic cornice, sixty feet from the ground, and will cost from \$1,500 to \$2,500 each. The third, "Woman as the Spirit of Civilization," will be in high relief, and will fill the pediment over the main entrance of the Woman's Building. It will cost about \$3,000.

Obituary.

On the 16th February, HENRY WALTER BATES, F.R.S., Secretary of the Royal Geographical Society, aged 67 years. A widow, three sons and one daughter, remain to deplore his loss. The biography and portrait of this Naturalist will appear in April number of *The Humming Bird*.

Naturalists' Agency, 225, High Holborn, London, W.C.

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Bicarbolic Acid...	... quart	2/-	Steel Pins for setting butterflies	4/- per 1000
Rectified Benzoline	... lb.	2/-	Setting Boards	... 1/- to 3/- each
Boucard's Insecticide	... lb.	4/-	Butterfly Nets complete	from 1/6 to 5/-
Ammonia	...	4/-	Sweeping and Water Nets	2/-
Collecting corked Box	from 1/- to 5/- each		Cork in Sheets	... 3/- doz.
Pocket corked box	... from 1/-		Magnifying Glasses	... 1/- to 5/-
Corked Box for Museums	... 24/- doz.		Hammers	... 1/- to 5/-
" make" and glazed, splendld	... 36/- "	Larger sizes can be supplied.	Naphthaline	... 4/- per lb.
Botanical box	... from 2/6 to 6/- each		Botanical Grey paper	... 6/- ream.
Pin box, for 12 grosses of different sizes	... 1/6		Folding Umbrella for collecting	
Pin box, with 1,000 pins	... 3/-		Insects	... 10/-
Sea compass	... from 2/- to 50/-		Steel Perforator for making holes in eggs	... 1/-
Collecting bottles with large opening	... from 6d.		Cutting pliers	... 2/-
Boucard's tin collecting box with two partitions	... 2/-		Flat	... 1/-
Straight Scissors	... from 2/-		Arsenical Soap	... 2/- per lb.
Curved	... 2/-		Glass Tubes for small insects and shells	... 1/- doz.
Taxidermist knives	... 1/6		Pill boxes for ditto	... 4/- gross.
Long Forceps	... 3/-		Flax	... 6d. per lb.
Small	... 1/-		Cotton wadding, per sheet	... 6d.
Insects' Nippers	... 1/6		Fishing rods with accessories	... 2/-
Sieve	... 2/-		Dredge for collecting shells, &c.	... 40/-
Blowpipe for cleaning eggs	... 2/-		Taxidermist's case, containing	
Digger	... 2/- & 4/-		1 Pair of Scissors, 2 Knives	
Folding ditto	... 6/-		1 Lime, 1 Grater, 2 Pliers,	
Insect Pins, English, French or German	... from 1/6 per 1000		1 Hammer, 1 pair of Forceps	
All other utensils for Naturalists can be had at a short notice, by ordering at the NATURALISTS' AGENCY.			1 Brush, 3 Gimlets, etc.,	
			complete	... from 12/- to 40/-
			Shell-emptying with handle	from 1/-

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No. 1. for Humming birds and Small birds	at 20s per hundred.
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			per doz. pairs	per doz. pairs
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5 "	8d	2s 6d	7 "	5s 0d
9 "	10 1s 0d	4s 0d	9	6s 0d
11	2s 0d	5s 6d	10	7s 0d
12	2s 3d	7s 0d	11	8s 0d
13	2s 6d	10s 0d	12	9s 0d
		doz. of pairs		
14	3s 0d	1s 6d	13	10s 0d
15	3s 6d	2s 6d	14	11s 0d
16	4s 0d	2s 6d	14	13s 0d
17	8s 0d	3s 0d	Larger sizes can be made	15s 0d
18	12s 0d	4s 0d		to order.

No. 1 to 4 are good for humming birds and others up to the size of Tanagers.

No. 5 to 8 Tanagers to Magpies.

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Carriage and private entrances.

Gymnastic, Summer Houses, Aviary, Bathing Cabin, &c.

Excellent Water.

Ground Floor.—Three fine rooms, full south, with 7 bay windows opening on the Gärden, Kitchen, Offices, Cellar, &c.

First Floor.—Five large and fine rooms, three full south, two on the north side, all of them communicating. Magnificent for Receptions, Soirées, &c. Cloak Room.

Second Floor.—Seven large rooms, four full south, one of them with dressing-room, three fine rooms on the north side. Cloak Room. Corridor in the middle.

Size of Villa: length 18 mètres, width 10 mètres.

Price	francs 60,000
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Two semi-detached Villas, full south, standing in their own grounds of 1,000 mètres, situated on the CORSO GARIBALDI, (the most pleasant walk of the town) hardly at 10 minutes walk from the central part of the town and 15 of the station.

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Separately—No. 25	francs 25,000
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APRIL, 1892.

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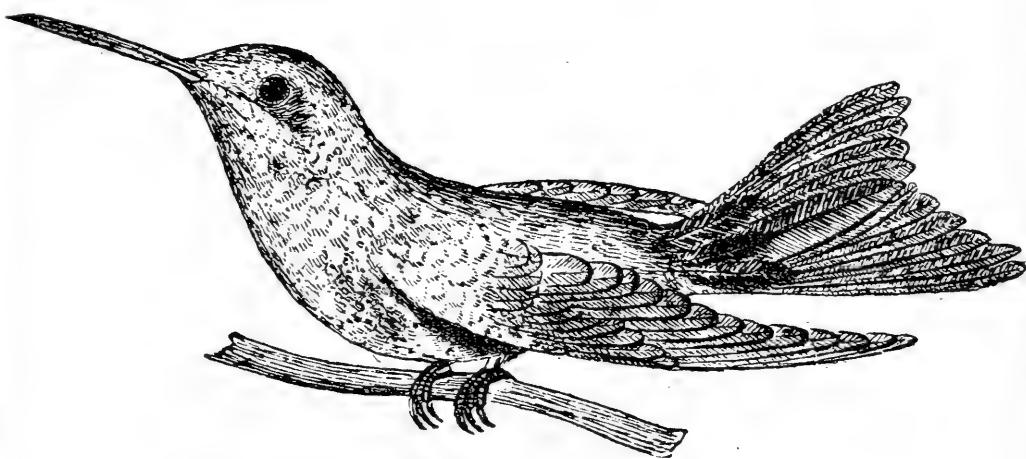
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC, AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



Arinia Boucardi

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HENRY WALTER BATES. 1825—1892.

The Humming Bird.

Biographical Notes on Henry Walter Bates, F.R.S., etc., etc.

Henry Walter Bates was born at Leicester on February 8th, 1825, where his father was engaged in one of the staple industries of the town. He was educated there, with a view to commercial life; and his school education was supplemented by attending evening classes, where he acquired his knowledge of classics and the rudiments of modern languages. But his taste for Natural History soon predominated, and in 1843-1844, several notes by him on British Coleoptera were published in the *Zoologist*. In 1845 he made the acquaintance of Mr. A. R. Wallace, who was then engaged as a tutor in Leicester, and this acquaintanceship proved fraught with events concerning his future career.

In April, 1848, the two friends embarked in a ship for Para. At that time there were no steamers plying between England and South America, and it was really a voyage that Messrs. Bates and Wallace had undertaken. They were the only two passengers. They arrived at their destination many weeks after, suffering more or less with bad weather during their voyage. They remained for some months at Para, at the mouth of the Amazons, a place rather insalubrious. They soon had to contend with sickness. Bates was attacked by yellow fever, but happily recovered; but during all his life he suffered more or less from the consequences of this terrible disease. Wallace lost his brother from the same plague. The two explorers separated shortly after. Wallace went and explored the Rio Negro, where he made some important discoveries, and Bates went up the main stream of the Amazons, exploring carefully all the places which he visited, on the shores of this mighty river. He spent 11 years on the Amazons, ascending up to a point over the Peruvian

frontier, distant 1,800 miles from the Atlantic. This voyage of explorations was made in *canoes*, small boats used by the natives. Only those who have done it, can have an idea of how tedious and hard it is to make a voyage of that description, all day long teased by myriads of a small fly, *Diptera*, which sucks all your blood, causing a great irritation and leaving on your skin a small round red spot which gradually becomes black when it dries, so that in a short time all the exposed parts are minutely tattooed red and black. If you go on shore, even for a few minutes, a multitude of small and large species of *Garapatas*, "*Arachnidae*" take possession of your clothes, and from there introduce themselves in every parts of your body, where they incrust their mandibles and remain fixed there until they are fat and full grown, ready to lay their eggs. Then they drop. Some are excessively minute and not easy of detection after taking possession of you; but you are constantly reminded of their presence by the irritation they produce on your skin. Others are of medium and large size. These can be removed by hand, but it is a tiresome work and not always successful as they usually select the most inaccessible places. If some days have passed when you detect them, you pull them out regardless of the consequences, but their mandibles are so incrusted in your flesh, that in many cases the body comes off but the head remains. Once the boat infested with these insects you will have to bear with them until the end of the voyage. These are the day pests, but as soon as twilight comes new tormentors arrive. The first is a small species of fly, *Diptera*, which is not injurious so far, but hovers around you in such quantities that they find their way in your eyes, nose, ears, and mouth and are very importunate. This lasts until night sets in, then comes Mosquitoes of all sizes, the pest known all over the world, even in Europe, but it is quite impossible to have an idea of the bites of these tropical species. Some are very large, some are not, but they are so abundant that you cannot have one minute of rest. Even with a mosquito net, which is rather hard to endure in consequence of the heat, and the small size of the boats, they find their way inside.

The poison introduced in your blood by these tropical Mosquitoes is very irritating. So that, with the inflammation produced by the bites of the day-pests, the heat, and the Mosquitoes, you can imagine what a life it is for the traveller, who risks himself on a journey of over one thousand miles on a tropical river.

Well, that is what Bates did, for love of science, and he had to suffer this martyrdom for many months, until he

settled at *Ega*, then a small village inhabited by some hundred people.

It is there and in the neighbourhoods, not far from that place, that Bates did work for a number of years, and was very successful.

He collected many thousand species of insects, chiefly *Colcoptera* and *Lepidoptera*, and most of them new to science. Even now, after the numerous descriptions made by him and others of the new species which he discovered on the Amazons, I think the matter is not exhausted, and many species remain still undescribed in his collection. *Ega*, at that time, was a real Paradise for an enthusiastic Naturalist like Bates.

In 1859, he left *Para* on an American trading vessel and returned to England, *via* New York. A few years after, in 1863, he published a description of his travels under the title, *the Naturalist on the River Amazons*. This book, originally in two volumes, was a great success, and is still selling well, in a somewhat modified form, in one volume. It has been translated in several European languages.

In this book he gives a vivid description of his travels on the Amazons. It contains very valuable information on the biology, ethnology, and geography of that country. Soon after that he married a Leicestershire lady, a great enthusiast of travels, who hoped to accompany him in his future expeditions, but in that she was deceived, for many events occurred which did not permit to think of future travels, and compelled him to remain in England.

His work on the Amazons attracted the attention of Sir Roderick Murchison, who had great influence at the Royal Geographical Society, and who became his warm friend and patron. A vacancy occurring in 1864 in the Assistant Secretaryship of the Society, the post was offered to Bates, who accepted and retained it to the last, for he was on duty up to a very short time before his death. His services to the Geographical Society will be fully acknowledged elsewhere, but it is only justice to say that during his time of office, Entomology has been greatly aided by him by sound advices given freely to a host of Explorers, whom he also materially assisted by equipping with apparatus for collecting. In this way he increased considerably his collections.

During his stay on the Amazons he put together an enormous mass of biological notes, in manuscript, copiously illustrated by sketches, for he was no mean artist. These notes still exist but (with the exception of those on the *Termitidae*) unpublished.

As a philosophical Naturalist he was a profound

student of the bearings of the phenomena he witnessed in his investigations of the rich Amazonian fauna.

On the question of the Origin of Species and cognate matters, a close friendship existed between him and Charles Darwin, as the writings of the latter abundantly show. That he was a thorough evolutionist is certain, that he remained a believer in natural selection as the sole factor in the Origin of Species may be not so certain.

In 1862 he produced his memoir on Mimetic Resemblances as illustrated by the *Heliconidac*, which took the world by surprise. After that, nearly the whole of his spare time was devoted to Systematic Entomology. At first the *Rhopalocera* engaged his attention, especially the *Papilionidae* and *Erycinidae*, his Catalogue of the latter having been adopted as a basis by succeeding authors.

About ten years ago he sold his collection of butterflies to Messrs. Godman and Salvin, "since liberally given by these gentlemen to the British Museum, with their own collection," and thenceforth occupied himself with *Colcoptera*; especially *Cicindelidae*, *Carabidae*, *Scarabaeidae*, and *Cerambycidae*. On these families his publications have been excessively numerous, for they concerned the whole world. They appeared chiefly in the principal scientific papers published in England, such as the *Proceedings of the Zoological Society*, the *Annals and Magazine of Natural History*, and many others.

There is scarcely a Volume of the *Entomologist's Monthly Magazine* in which his contributions do not appear.

His last important work was his contributions in the *Biologia Centrali Americana*, in which he has described all the species of the four important families, *Cicindelidae*, *Carabidae*, *Scarabaeidae*, and *Cerambycidae*, which form a prominent feature in this very important work. This alone would satisfy the ambition of any Entomologist; but with Bates there were no impossibilities.

A short time before his death he sold his collection of *Cerambycidae* to Mr. Charles Oberthür of Rennes.

For a considerable time he had been engaged on a new classification of the *Carabidae* on certain oral structures. This was to have been his *magnum opus*, as he himself used to say; but death prevented its completion, which is greatly to be regretted.

Bates has also been a contributor to many other important publications. His work (chiefly anonymous) in this line was enormous at one time, and he was on the staff of the *Athenaeum* and other scientific reviews. He edited and extended Stanford's book of geography and travels; *Central*

America, the West Indies, and South America, one volume of 572 pages. It is incredible that one man alone, in such a short space of time, "32 years," has been able to do the amount of work done by Bates, and what is more extraordinary still, for one who knew him personally, is that he never seemed to be in a hurry, which proves that he was a methodical and very hard worker. Honour to his memory !!!

In 1861 he was elected a member of the Entomological Society of London, of which he was President in 1868 and 1869, and again in 1878. In 1871 he was admitted to the Linnean Society under a rule that enables the council to waive the pecuniary contribution in especial cases. In 1863 he had received a like distinction at the hands of the Zoological Society. In 1881 he became a fellow of the Royal Society, the highest distinction which can be conferred in England to a scientist. His official position caused him to be Secretary of the Geographical Section of the British Association for many years; but he declined the honour of being president of the section.

The late Emperor of Brazil, in one of his visits to London, made the acquaintance of Bates, and had several interviews with him. He was so delighted to meet with such a distinguished linguist and scientist, that he knighted him on the spot *Commander of the Order of the Rose*, a distinction rarely conferred on foreigners.

In private life, Bates was a model husband, a good and loving father, and a true friend.

I first made his acquaintance in 1864, just a little before my third voyage in Mexico. In 1869 I met him again in London, and since that epoch I have visited him often, and I have always considered him as one of my best friends. I always found him modest, trustful, helping, and sociable, and few are the entomologists of the day who do not know the way to his house.

During the many years that I visited him, especially on Sundays, the only free day he had, it was very seldom when I did not meet at his place one or another of the best known naturalists of the world.

Delightful were the afternoons and evenings passed in company of Bates and his charming family.

His conversation was always extremely interesting, and time with him did not pass but fly. It was time to part and we had never exhausted all that we had to say. It is true that we had the same tastes, and in many things we did agree entirely, but with all that, it shows what a sociable and good friend he was, always ready to help you in every way.

Lately, for want of time, I did not see him as much as before, and I regret it, because I consider that I have lost a great deal.

In the middle of last year, he lost his beloved daughter, Alice Bates, the eldest of his children, and he felt it immensely. In fact, at the time of his death he had not got over it.

Here are some extracts of the last letter which he wrote to me shortly before his death.

January 7th, 1892.

Mon cher Boucard,

I gather from your letter that you do not know that our much loved daughter Alice is dead. I felt sure that her husband's family had sent the funeral cards to you and dear friend Sallé, for I gave your addresses to them; but it appears this was not the case. She died in May last, leaving an infant girl, who is now being brought up by her sister Sarah. We have not got over our grief, and I have been more or less ill since.

Mrs. Bates and I went away after Christmas for eleven days and only returned last evening. I need not repeat what I have said in a former letter, that we shall be glad to see you whenever you find it convenient to come. But you will find it a dull household.

Mrs. Bates desires me to send you her kindest regards.

Many thanks for sending in the *Humming Bird* so regularly. You must work very hard.

Yours sincerely,

H. W. BATES.

As I said before, during all his life he resented more or less the consequences of the attacks of yellow and intermittent fevers, from which he suffered during his expedition on the Amazons. His liver, being out of order, occasioned attacks of dyspepsia, which his robust constitution enabled him for many years to throw off, but lately symptoms of some organic gastric mischief appeared; upon this influenza supervened, and his last illness was of brief duration. He leaves a widow, three sons (two of whom are in New Zealand), and a married daughter to deplore his loss.

The death of this eminent naturalist, at the early age of 68, is a great loss for science, to whom he was one of the most devoted adepts, but his memory will never fade. He has done much for science, and it is to be hoped that one or more of his sons will follow the brilliant career so well fulfilled by their father.

A. BOUCARD.

CHICAGO EXPOSITION.

World's Fair Notes.

An Ohio World's Fair commissioner has estimated that the exhibitors from his State will spend upwards of \$5,000,000 in the preparation of their exhibits for the Exposition.

The California building at the Fair will be an imposing structure of the "old mission" type, 110 by 500 feet, with a dome, and costing about \$75,000. It will be surrounded by a hedge of Monterey cypress.

Denmark will spend about \$5,500 in showing, as a leading feature of its World's Fair exhibit, a Danish dairy, complete and in operation. The dairy interest is one of the most important in Denmark, and the most approved methods and mechanical appliances are utilized in the dairies of that country.

W. L. Libby & Sons, of Toledo, intend to erect, on Midway Plaisance, a factory in which the manufacture of cut glass can be seen, from the furnace, on through the cutting, finishing and decorating departments, until the finished product is turned out. The factory plans call for a structure 125 by 200 feet, of stone, iron, and glass, and with imposing dome. The firm intends to spend \$40,000 on the building alone.

Italy will make no governmental display at the Exposition. The king, however, has recognized the Fair, by appointing a commission, and Minister of State, Rudini, has informed Vice-President Bryan and Director Higinbotham, that the government will encourage individual exhibitors in every way possible. He intimated that it would even pay for the transportation of all exhibits. Mr. Higinbotham reports that there is throughout Italy much enthusiasm over the Exposition, and that the painters, sculptors and manufacturers of artistic wares are hard at work on intended exhibits.

Baron de Berlepsch, German minister of commerce, has written to the chamber of commerce of Crefeld, the principal place in Prussia, for the manufacture of silk goods, that the Emperor ardently desires that there should be as fine a display as possible of German silks and velvets at the Chicago World's Fair. A majority of the silk and velvet manufacturing firms in the Rhenish provinces will comply with the wishes of the Emperor, whose interest in Germany's share of the exhibition is having a stimulating effect in all directions.

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Blowpipe for cleaning eggs 2/-		Taxidermist's case, containing
Digger 2/- & 4/-		1 Pair of Scissors, 2 Knives
Folding ditto 6/-		1 Lime, 1 Grater, 2 Pliers,
Insect Pins, English, French or German	... from 1/6 per 1000		1 Hammer, 1 pair of Forceps
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11 2s 0d	7s 6d	10 7s 0d	9s 0d
12 2s 3d	7s 0d	11 8s 0d	10s 0d
13 2s 6d	10s 0d	12 9s 0d	11s 0d
	doz. of pairs		
14 2s 0d	1s 6d	13 10s 0d	13s 0d
15 3s 6d	2s 6d	14 11s 0d	13s 0d
16 4s 0d	2s 6d	14 13s 0d	15s 0d
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The Humming Bird.

SCIENCE AND INDUSTRY.

American Pearls.

Pearls are found all over America; but actually, the only fisheries carried on successfully, are on the Pacific Coast, between Mazatlan and Tehuantepec, Mexico. In former times, many fine pearls were found at Panama, but the fisheries are entirely abandoned now. Occasionally some fine pink pearls are found on the Atlantic Coast, between Florida and Trinidad; but these are produced by the large well known shell, *Strombus gigas*, a very common species on the Atlantic Coast of America. In Vera Cruz, Mexico, they are abundant, and are sold in the market for eating purposes. When living there, I bought some several times, and I tasted them, but I cannot say that they were to my taste. Either we did not know how to cook them or they were very old; but what I can say is that they were very tough. I have only once seen a pearl found in these shells; but I have heard that in the West Indies they are often brought for sale by fishermen who make their business of fishing these shells. The pearls are usually pink and are much valued by jewellers. In Bahamas, these shells are very abundant. As many as 500,000 have been exported to England in one year. The layers composing the shell being of different colors, it is extensively used in carving cameos. It is also ground to powder for the manufacture of the finer kinds of porcelain. According to my experience, pearls exist more or less in all the species of *Strombus* and other allied genera, as in all species of Oysters, *Anodontes*, *Unios*, and even in Mussels; but it is in oysters that they are more abundant. The American pearls sent to the United States and European markets are the produce of *Ostrea macroscisma* Desh, a very common species on the Pacific Coast in Mexico. When living there, some thirty years ago, I met with fishermen who made their business of fishing for pearls. The divers gathered the oysters at the bottom of the sea with their hands, and after each dive generally brought one lump of shells in each hand. Two minutes

was considered as the longest time that they could remain under water ; but they did not require even so much, the shells being plentiful. Two or three divers were on each boat and it was not an easy task for them to gather enough to fill the boat. Some banks are deep, some are not, and these last are the ones which were explored in my time. The shells were brought on land and left there to die. After that they were minutely examined for the pearls. The large ones are rather scarce and fetch a good price ; but the bulk of them were what they call in the country *Mostacilla*, scarcely larger than very small shot. These are sold at about threepence each. It is not so much the size, but the freshness and their beautiful orient which make their value. The roundest are the more valuable. A fine pearl, quite round, the size of an English pea, is worth between fifty and one hundred pounds sterling. On the Pacific Coast, I met on the beach several large heaps of empty oyster shells left there by the fishermen, who did not put any value on them ; but there is a good market for them in Europe and North America. It is with these shells that many industrial objects are manufactured, the principal being pearl buttons.

I am certain that the establishment of good pearl fisheries on the Atlantic and Pacific Coasts of America would pay well.

A. BOUCARD.

Fish from Volcanoes.

Attention has recently been called to the fact that the volcanoes of the Andes eject large quantities of fish from the craters in the first stage of an eruption. The Indians hold that many of these fishes are alive when they are found on the sides of the mountain, and it is certain that few are either boiled or mutilated. The explanation is that, during the long period of quiescence, extending even to a century, the crater becomes choked up and turned into the bed of a lake, with subterranean channels to other crater lakes, from which the spawn probably comes. The fishes are generally blind, showing that they are of an underground variety.

A very Large Tree.

A very large tree, one of the largest in California, the country of big trees, was discovered near Arlington, Shohomish county, a few days ago. It is a cedar and measures 68 feet in circumference. Around the knotty roots the tree measures 99 feet. About 75 feet from the ground it forks into four immense branches, and just below the

forks is a big knot hole. Five men climbed into the hole and explored the interior of the tree. It was found to be a mere shell, and about 45 feet down it would afford standing room for 40 men. The tree is still green, and a remarkable feature is said to be that it is barked on the inside and outside alike.

CHICAGO EXPOSITION.

World's Fair Notes.

A California "big tree" has been selected in Tulare county to be shown at the Exposition. A committee of the Board of Trade, after an extended tour of inspection, picked out a tree measuring 87 feet 9 inches in circumference at the base, 85 feet five feet above the ground, and 65 feet at a height of 16 feet.

Denmark has made a World's Fair appropriation of \$67,000.

A communication has been received from the British Commission asking for space to exhibit the rifle calibre guns manufactured by the Maxim-Nordenfeldt Gun Company. The company wants to erect a building 30 x 15 feet to exhibit its guns in practice. One end of the building will be filled with sand bags, into which the projectiles of the guns will be fired. It is claimed that the arrangements are such as will insure perfect safety, and will be reproductions of a similar exhibit recently given at the Royal Naval Exposition in London. The request was referred to Chief Willard Smith of the Transportation Department, as the exhibit if allowed will come under the head of naval and marine display.

A very complete, and doubtless an eye-opening diamond exhibit, will be made by Cape Colony, South Africa. The exhibit will include 10,000 carats of uncut stones, a large quantity of very fine cut and polished ones, together with all that is necessary to show the process of mining and washing. For this it will be necessary to transport to Chicago 100 tons of pulverized blue earth, 50 tons of unpulverized earth, and a complete washing machine, which will be operated by natives. The exhibit will also include a unique collection of crocidolite, special diamondiferous products, ostrich feathers, fleeces, etc. It is reported that a Bushman and Hottentot in native dress will accompany the exhibit.

A continuous clam-bake will be one of the attractions which epicurean visitors will find at the Exposition.

THAT WONDERFUL LAST NAIL.

Mrs. Potter Palmer will put the finishing touch on the Woman's Building with hammer and spike of costly make.

Mrs. Potter Palmer, President of the Board of Lady Managers of the Exposition, as already announced, will drive the last nail used in completion of the Woman's Building. This nail will be furnished by the women of Montana, and will be a very wonderful one, as is indicated by this description of it given by the *Helena, Montana, Independent* :—

The nail has been so made as to form the back or cross bar of a brooch, which is to be a shield bearing the coat of arms of Montana reproduced in native gold without a trace of alloy in its composition. The shield will be of gold, and the symbolical figures will be made of the same metal but of different colors. The waterfall in the foreground will be of light colored gold sunk into the shield, and the plow and pick, standing at the foot of the falls, will be of a darker shade, as will be the background or relief. The wreath surrounding the escutcheon will be of native gold, and the figures of the two men supporting the whole on either side will also be of the same rich, yellow gold. Underneath will be the scroll, bearing the motto of the state, "Oro y Plata." In the two upper portions of the wreath two Montana sapphires will be inserted. Instead of merely engraving the figures, each will be wrought separately and then fastened together, making the task of shaping the brooch not only a delicate, but exceedingly difficult one, and one that will require much skill and patience.

To Mrs. J. E. Rickards, of Butte, belongs the credit of the happy idea of making the last nail, one of such interest. In design, the nail, which is being made by a Butte jeweller, will be the counterpart of an ordinary twelve-penny nail and will be composed of three strips with silver in the centre and the gold and copper on either side. The nail and brooch are distinct articles and after the former has been driven, it will be drawn from the wood, fastened to the brooch and the whole presented to Mrs. Palmer.

The women of Nebraska have undertaken to furnish the hammer with which this "last nail" will be driven. A description of the hammer has not yet been given, but it is the intention to make it worthy of the aristocratic nail with which it will be brought in contact by Mrs. Palmer. It has been suggested that it be made of native Nebraska woods, inlaid with gold, silver, and pearl.

The World's Fair committee of the North American Turner Bund has made a personal application to Director General Davis for space for a display of gymnastic apparatus, literature on the subject of physical exercise and development, and representations of gymnastic organizations, as well as for outdoor gymnastic exhibitions, which the Turners desire to give eight days in each month during the Exposition.

Pope Leo XIII. has written a letter strongly commending the Exposition, which it is believed will have a most favorable effect in stimulating interest in the Fair on the part of all Catholic countries and communities.

More than 180 exhibitors are chronicled from Philadelphia alone.

The "San Francisco Women's California Book Exhibit for the World's Fair," is the name of a society recently organized in San Francisco. The object of the society is to collect a complete library of books by Californian writers, files of papers, scrap-books, scattered papers and sketches worthy of preservation. These will be taken to Chicago and exhibited during the Fair. After the Exposition the collection will be given to the Golden Gate Park Museum.

The Board of Lady Managers is making arrangements for an extensive exhibit showing woman's share in the illustration of books, in engravings and other forms of picture production. During her recent visit to New York, Mrs. Palmer consulted with a number of publishers and received considerable assistance from them. A list of distinguished women illustrators was secured and plans set on foot to obtain old volumes and manuscripts illustrated by women, together with historical data concerning woman's share in this line of work from ancient times down to the present.

The New York Assembly has voted permission for the raising of one or two old sunken vessels in Lake George for the purpose of sending them as relics to the Fair.

Saginaw, Mich., noted as a salt producing city, is constructing in miniature a complete salt plant for exhibition at the World's Fair.

The cottage in which George Fox, the founder of the Society of Friends or Quakers, was born in Leicestershire, England, is being taken down to be re-erected in Chicago.

The "wooded island" in the Exposition grounds is

beginning to assume the character which in great part it will have during the Fair—that of a gigantic flower garden. Already the Floricultural Department has received 27,000 rose bushes and other plants, several thousands of which came from abroad. These are being transplanted on the island.

New York has made a World's Fair appropriation of \$300,000.

Dr. Bertollete, Commissioner to the La Platte Republics, has informed the Latin-American Department that he is endeavouring to secure for the Exposition a colony of lace makers and gold and silver workers from Paraguay. These people are ingenious, their product being equal to that of the Brussels working women, and the fact that they use vegetable fibre exclusively makes their work of even greater value and interest. It has been planned by the Latin-American Department to have a group of these lace-makers on the Exposition grounds; also a group of workers in gold and filigree.

The Great Western Railway of England will exhibit in the Transportation Building the famous old locomotive, "The Lord of the Isles," which was built at the Company's works in Swindon in 1851, from designs of the late Sir Daniel Gooch. This locomotive was a notable exhibit at the first World's Fair in London in 1851. From that time until July, 1881, it was continually in service, and ran during that period a distance of 789,300 miles without being fitted with a new boiler. As a pioneer of early railroading, and as a contrast to the powerful "Mogul"; this old locomotive will attract much attention.

The Washington State World's Fair Building will be constructed in sections at Tacoma and sent to Chicago next September.

A number of owners of steam yachts in New York intend to utilize them to transport themselves and their friends to the Exposition by way of the St. Lawrence and Welland Canal. They believe it will be of great advantage to live aboard their yachts, and thus be independent of crowded hotels. It is reported that the owners of many steam barges in Canada will fit them with comfortable living quarters, and carry Canadian visitors to and from the Fair.

A 100-year-old bearing orange tree, from San Gabriel, is one of the exhibits announced from California.

Ostrich eggs, artistically painted in a prize competition, are to be a feature in the exhibit made by Cape Colony, South Africa.

The main Exposition buildings require for their orna-

mentation 160,678 separate pieces of staff work. Of these, 108,000 have been cast and more than 59,000 have been put in place on the buildings.

Italian Commissioner Alexander Del Nero writes from Rome to the effect that there will be a fine exhibit of the mosaics, tapestries, Columbian relics, and other treasures of the Vatican which have never yet been on exhibition. He further reports that the Ethnographic Museum of Rome will probably loan many Columbian antiquities to the Exposition.

R. S. Moore, of Newburn, N. C., claims to have fragments of the chain which restrained Columbus when he was in prison, and he intends to exhibit them at the Fair. J. C. Calhoun, of New York, says he has pieces of the house in San Domingo in which Columbus was imprisoned, and he has a similar desire.

A CURIOUS RAT-CATCHER.

In certain parts of Brazil, where the climate is intensely hot, and where rats are a great nuisance, the common cat does not thrive, but is replaced by a domestic rat-catcher, whose presence causes a decidedly unpleasant sensation to visitors from abroad, when they first come in contact with this creature. An Englishman who recently visited Brazil upon a business tour, and who spent a short time at the estate of a well-to-do Brazilian, writes this account of his observation of the Brazilian rat-catcher.

On the morning after my arrival, in descending the staircase from my room to go down to breakfast, I was frightened almost half to death at seeing an enormous snake curled up on the floor exactly at the foot of the stairs.

The serpent was apparently asleep, but I was not at all sure that he might not be preparing to strike at me, so I ran back up the stairs with all the speed I could manage, and then proceeded to shout for help.

In two minutes the hall was full of servants, all gazing at me in astonishment; and my host rushed out of his apartment.

"What is the matter?" he asked in his best English.

"Why," said I, "look here! Look at that snake!"

I pointed to the coiled-up monster at the foot of the staircase, which now had lifted up its head a little, and was looking sleepily about it.

The servants held their hands to their mouths, and my host laughed outright.

"Why," said he, "that's only Pedro; that's our *giboia*."

"Oh," said I, gasping, "I thought it was a great snake."

"It is a snake," said my host, "but it is perfectly harmless, except to rats. You will not find a house in this part of Brazil without one. They keep the premises clear of rats. Pedro won't hurt you."

"But how am I going to get downstairs?" I asked, uneasily.

"Oh, you can step over him."

I declined, however, to make this attempt; whereupon a servant came forward, and seizing the snake about the neck with both hands, dragged it out into the yard.

I saw that the creature, as he was extended, was not less than four yards long and as thick as the arm of the negro who dragged him out.

Before I left the place I found out a great deal about the *gibóias*. They are a species of small boa-constrictor, and are employed very generally in Brazil to catch rats. They are inoffensive, apparently not at all venomous, and in their domesticated condition perfectly tame.

In his habits Pedro was a good example of his race, though he was of considerably larger size than the average. All day long he slept somewhere in the house, generally at the foot of the stairs. But when evening approached he began to wake up, and after nightfall he glided swiftly about the premises looking for rats.

He even had holes which enabled him to get between the floors and ceilings, and into the space within the partitions. Whenever he found a rat he pounced upon him, wrapped him in his folds, and carried him out of the house, leaving him dead. The servants told me that the backbone of every rat he caught was broken in at least a dozen places.

As to me, I preferred the rats to the snake, and took good care that my chamber-door was shut at night, and that there were no holes left open in the ceiling or the floor from which Pedro might emerge into my apartment.

He never seemed to eat the rats; indeed, I never saw him eat anything at all. The negroes said he killed the rats for the fun of it.

I afterwards saw the *gibóias* for sale in the markets of Pernambuco and Bahia at prices ranging from four to ten shillings. I was told that they easily become domesticated to such an extent that if they are removed from one house to another they invariably return to the house from which they have been taken.

In the country, therefore, the rat-snake goes with the house, and if you have occasion to purchase or hire a residence, the proprietor will brag about the virtues and skill of the *gibóia*.

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" make,"	... 36/-		Botanical Grey paper ...	, 6/- ream.
Larger sizes can be supplied.			Folding Umbrella for collecting	
Botanical box from 2/6 to 6/- each		Insects ...	, 10/-
Pin box, for 12 grosses of different			Steel Perforator for making	
sizes 1/6		holes in eggs ...	, 1/-
Pin box, with 1,000 pins ...	3/-		Cutting pliers ...	, 2/-
Sea compass from 2/- to 50/-		Flat ...	, 1/-
Collecting bottles with large opening			Arsenical Soap ...	, 2/- per lb.
from 6d.			Glass Tubes for small insects	
Boucard's tin collecting box with			and shells ...	, 1/- doz.
two partitions	... 2/-		Pill boxes for ditto ...	, 4/- gross.
Straight Scissors from 2/-		Flax ...	, 6d. per lb.
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Taxidermist knives 1/6		Fishing rods with accessories ...	, 2/-
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Small 1/-		Taxidermist's case, containing	
Insects' Nippers 1/6		1 Pair of Scissors, 2 Knives	
Sieve 2/-		1 Lime, 1 Grater, 2 Pliers,	
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Digger 2/- & 4/-		1 Brush, 3 Gimlets, etc.,	
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,, 11 2s 0d	5s 6d	,, 10	7s 0d	9s 0d
,, 12 2s 3d	7s 0d	,, 11	8s 0d	10s 0d
,, 13 2s 6d	10s 0d	,, 12	9s 0d	11s 0d
	doz. of pairs			
,, 14 3s 0d	1s 6d	,, 13	10s 0d	13s 0d
,, 15 3s 6d	2s 6d	,, 14	11s 0d	13s 0d
,, 16 4s 0d	2s 6d	,, 14	13s 0d	15s 0d
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JUNE, 1892.

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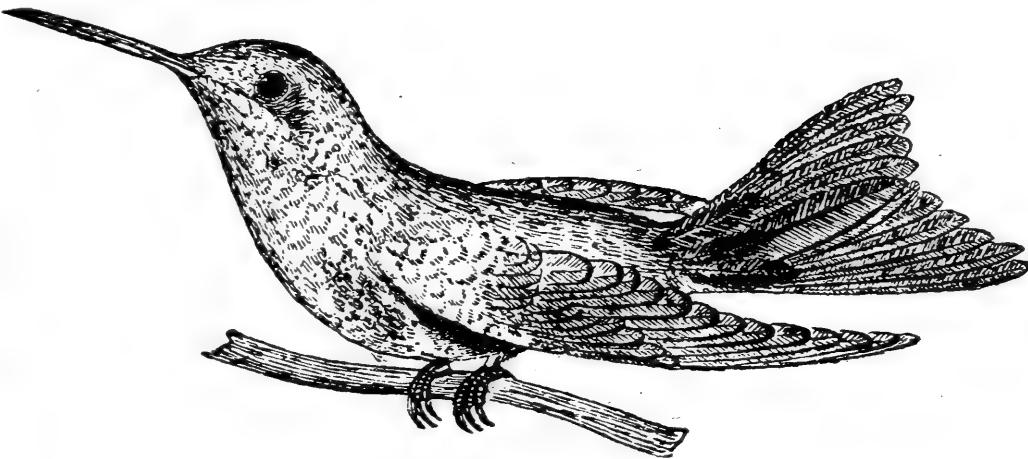
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC, AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD.



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The Humming Bird.

List of birds collected by M. Hardy at Porto Real, Brazil, with description of one supposed new species, by M. M. Boucard and Count Berlepsch.

A small collection of birds having been received from Porto Real, "Brazil," we thought that the publication of a list of the species collected by Mr. Hardy in that country would be of interest to Ornithologists. Porto Real is situated at about 80 miles from Rio Janeiro, in the interior. It is surrounded by hills and is well watered. The ornithological fauna resembles very much that of Rio Janeiro and Bahia. It seems to be the exact habitat of the rare *Gallinago gigantea*. Only one new species was sent, *Formicivora stictocorypha*, but it is very likely that if Mr. Hardy continues his explorations in that country he will be rewarded by the discovery of some new and interesting species.

ORDO RALLI, Boucard 1876.

Family GALLINULIDAE, Blas.

1. *Ionornis martinica*, Linné.

One young specimen of this common species.

ORDO COLUMBAE, Lath 1790.

Family COLUMBIDAE, Leach 1825.

2. *Columba rufina*, Tem.

3. *Chaemepelia talpacoti*, Tem.

Two specimens of this lovely species.

4. *Engyptila chalcauthenia*, Sclat and Salv.

One specimen of this rare species.

ORDO LIMICOLAE.

Family SCOLOPACIDAE, Vig 1825.

5. *Gallinago gigantea*, Tem.

Four specimens of this exceedingly rare species.

ORDO HERODIONES.

Family TANTALIDAE, Bp. 1831.

6. *Molybdophanes coerulescens*, V.

ORDO ACCIPITRES.

Family FALCONIDAE, Leach 1825.

7. *Elanus leucurus*, Vieill.

ORDO STRIGES.

Family BUBONIDAE, Sharpe 1874.

8. *Scops brasilianus*, Briss.

9. *Syrnium suinda*, Vieill.

One specimen of this rare species.

ORDO PSITTACI.

Family PSITTACIDAE, Leach.

10. *Psittacula vivida*, Ridgw.

Two specimens of this rare species.

ORDO COCCYGES.

*Sub Ordo COCCYGES ZYGODACTYLAE.**Family CUCULIDAE, Leach 1829.*

11. *Crotophaga ani* L.

12. *Piaya pallescens*, Cab and Heine.

ORDO PICI.

Family PICIDAE, Leach 1825.

13. *Picumnus cirratus*, Tem.

Several specimens of both sexes.

14. *Dendrobates maculifrons*, Spix.

Several specimens of this rare species.

15. *Melanerpes flavifrons*, Vieill.

16. *Colaptes campestris*, Vieill.

ORDO PASSERES.

Sub Ordo OSCINES.

SECT OSCINES DENTIROSTRES

Family TURDIDAE, G. R. Gr. 1860.

17. *Turdus rufiventris*, Vieill.

18. *Turdus flavipes*, Vieill.

19. *Turdus amauro-chalinus*, Cab.

20. *Turdus albiventris*, Spix.

Female :— Upperside olive-brown. Underside rufous-brown passing to grayish-brown on the abdomen, and pure white on anal region, chin paler-brown streaked with dark-brown. Under wing-coverts pale-chestnut, inner margin of quills glossy pale-brown. Wings brownish-black with the margins olive-brown. Feet yellow.

Family TROGLODYTIDAE, Sclat 1862.

21. *Thryophilus longirostris*, Vieill.

Family COEREBIDAE, Bp. 1849.

22. *Dacnis cyanomelas*, Gmelin.

OSCINES CONIOSTRES Cuv.

Family TANAGRIDAE, Boié 1826.

23. *Procnias tera*, L.

24. *Euphonia chlorotica*, L.

25. *Euphonia pectoralis*, Lath.

26. *Pipridea melanonota*, Vieill.

27. { *Calliste tricolor*, Gmel.
 { *Calliste seledon*, Mull.

28. *Tanagra palmarum*, Wied.

29. *Tanagra sayaca*, L.

30. *Tanagra ornata*, Sparn.

31. *Ramphocoelus brasilius*, L.

32. *Tachyphonus cristatus*, Gmel.

33. *Tachyphonus coronatus*, Vieill.

Several specimens of both sexes.

34. *Nemosia melanoxantha*, Licht.

35. *Sattator pallidiventris*, Berlepsch.

Several specimens of this rare species.

Family FRINGILLIDAE, Sw. 1831.

36. *Emberizoides herbicola*, Vieill.

37. *Ammadromus manimbe*, Licht.

OSCINES CULTRIOSTRES, Cuv.

Family ICTERIDAE, Cab 1847.

38. *Molothrus bonariensis*, Gmel.
 39. *Aphobus chopi*, Vieill.

SUB ORDO TRACHEOPHONAE.

Family DENDROCOLAPTIDAE, Selys 1842.

40. *Synalaxis cinnamomea*, Gmel.
 41. *Anabatoides fuscus*, Vieill.
 42. *Dendrocincla turdina*, Licht.
 43. *Dendrocolaptes picumnus*, Licht.
 44. *Xiphorhynchus procurvus*, Tem.

Family FORMICARIDAE, Sclat 1858.

45. *Thamnophilus guttatus*, Vieill.
 46. *Thamnophilus naevius*, Gmel.
 47. *Thamnophilus ruficapillus*, Vieill.
 48. *Formicivora stictocorypha*, n.sp.

Closely allied to *F. squamata*, from which species it differs in having the head black, spotted all over with white; underneath, the lower part of abdomen and anal region are grayish-black, without any white as in *F. squamata*. Bill and feet black. Total length, 5 in. Wing, 2 $\frac{1}{4}$. Tail, 2 $\frac{1}{4}$. Culmen, $\frac{1}{2}$. *Type of species*, in Museum Boucard.

49. *Pyriglenä leucoptera*, Vieill.
 50. *Myrmeciza loricata*, Licht.

SUB ORDO OLIGOMYODAE.

Family TYRANNIDAE, Cab. 1850.

51. *Taenioptera nengeta*, L.
 52. *Sisopygis icterophrys*, Vieill.
 53. *Copurus colonus*, Vieill.
 54. *Platyrhynchus mystaceus*, Vieill.
 55. *Serphophaga subcristata*, Vieill.
 56. *Phyllomyas brevirostris*, Spix.
 57. *Elainea pagana*, Licht.
 58. *Myozetetes similis*, Spix.
 59. *Pitangus sulphuratus*, L.
 60. *Pitangus maximiliani*, Heine.
 61. *Myodynastes solitarius*, Vieill.

62. *Megarhynchus pitangua*, L.
63. *Empidochanes fringillaris*, Pelz.
64. *Myarchus ferox*, Gmel.
65. *Empidonoma varius*, Vieill.
66. *Tyrannus melancholicus*, Vieill.

Family COTINGIDAE, Bp. 1849.

67. *Phibalura flavirostris*, Vieill.
Two specimens, male and female.

Female :—Head grayish-brown with a black streak in the centre of each feather, centre of head greenish. Wings black, edged with green, wing-coverts olive-green. Chin yellow, minutely spotted with black. Lower part of breast, abdomen, flanks, and under tail-coverts white at base of feathers, then crossed with black and edged with greenish-yellow. Rest like the male.

68. *Illicura militaris*, Shaw.
69. *Chiroxyphia caudata*, Shaw.
Two specimens, male and female.
70. *Chiromachaeris gutturosa*, Desm.

ORDO TROCHILI, Boucard 1876.

Family TROCHILIDAE, Vig. 1825.

71. *Grypus noevius*, Dum.
72. *Clytolaema rubinea*, Gould.
73. *Chrysolampis moschitus*, L.
74. *Lepidolarynx mesoleucus*, Tem.

**Description of a supposed new species of the
Genus *Manticora* "Cicindelidae,"
from Damara Land, South Africa,
by A. Boucard.**

In the collection of *Cicindelidae* of the late Mr. Ferdinand Grut, of which I have acquired the greater part, I have found a remarkable species of *Manticora* labelled *Manticora*, *n.sp.* Having studied carefully this insect, I have come to the same conclusion as the late Mr. Grut, that it is undescribed, and I have a great pleasure to dedicate this fine species to the memory of this most esteemable Entomologist.

Manticora gruti, *n.sp.*

Habitat.—Damara Land, South Africa.

Male.—Head, thorax and elytrae smooth and black, shining most brilliantly, somewhat like *M. latipennis*, Waterhouse, but it is easily distinguishable from that species by its smaller size, and by the absence of granulations on the elytrae, which, excepting their extremities, are only faintly striated, the upper parts of the elytrae are acutely pointed, and terminates with a hook turned downwards. A little lower down, there is another hook directed also downwards, followed by three more, but less apparent. Lower down can be seen, for all the length of the external margin, another feeble tinge of these hooks, having the appearance of a deep punctuation. The extremities of the elytrae are deeply granulated, and covered with long black bristly hairs above, and on the margins. These bristly hairs are also apparent on the margins of head, and on all the legs where they are abundant and conspicuous. It is smaller than *M. latipennis*, scarcely larger than *M. tuberculata*, with the elytrae wider than in the last species.

Length $1\frac{1}{8}$ in. Largest width of elytrae $\frac{6}{8}$.

CHICAGO EXPOSITION.

World's Fair Notes.

Applications for space in the Exposition buildings now aggregate more than 4,000,000 square feet, a little over one-third being from foreign applicants.

Great Britain has added £35,000 to its World's Fair appropriation, making it now £60,000 or approximately \$300,000.

Victoria, Australia, has made a World's Fair appropriation of \$100,000.

Arguments for and against Sunday opening of the Exposition will be heard by the National Commission on October 6.

A young lad, son of the editor of the Florida *Standard*, is making, for exhibition at the Fair, a table upon which appears an inlaid map of the state, each county being accurately represented by a separate piece of native Florida wood.

In the California building will be shown a growing specimen of every California domestic flower obtainable, and also paintings, in water and oil, of 600 wild flowers and grasses.

In the Government exhibit will appear all the relics, which are obtainable, of various Arctic exploring expeditions.

The American Bible Society will make an exhibit in which will appear copies of Bibles in more than 200 different languages.

The French Chamber of Deputies approved by a unanimous vote the credit asked by the government to be expended for the French exhibit at the Exposition. The appropriation amounts to \$675,500.

Mexico's exhibit will include a number of fine works of art. Casts are being made of the sacrificial stone, the God of War, the Goddess of Water, the Calendar Stone and other Aztec relics, now in the Mexican National Museum. From the National Art Gallery, which has a very large collection of paintings, a number of the best works will be sent to Chicago. Among them will be the representation of Hidalgo, the "George Washington of Mexico," which was exhibited at the Paris Exposition.

The number of men working on the Exposition buildings is now more than 6,000. On some of the buildings work is proceeding day and night.

Prince George of Wales, who if he lives will some day be king of England, will visit the Exposition, a cablegram from London announces.

In the Michigan exhibit will be a representation in wax of 500 specimens of fruit which grow in the state. It will be prepared by a Kalamazoo woman.

E. S. Denison, of Alameda country, Cal., intends to send to the Exposition a pumpkin weighing 326 pounds,

Ceylon will have at the Exposition several tea kiosks formed of native timber, including specimens of its exquisitely beautiful cabinet woods—ebony, satinwood, calamander, tamarind, nadun suriyamara, etc. Descriptions appearing in Ceylon papers indicate that these kiosks will be of most elaborate design and finish, and that the tea industry will spare neither pains nor expense in drawing the attention of visitors to the merits of the fine flavoured beverage.

A complete collection of Ohio birds, including every variety known to live within the boundaries of the state, will be an exhibit at the Exposition.

The salt manufacturers' association of Michigan has agreed to make the salt exhibit for the state, and will get up a display which, doubtless, will attract a great deal of attention. A Bay City man has made a life study of salt manufacturing, and has learned the methods practised in all ages for making salt. It is the intention to have him

make models of all salt manufacturing apparatus used from the earliest days down to the present time, from the most primitive to the modern salt blocks, and in connection with the models, show all the processes now practised in producing salt. The association will, of course, show a full line of salt.

The upper Michigan peninsula has applied for 20,000 square feet of space, and will fill it with mineral and timber products. It is proposed to show several cords of natural copper as it comes out of the mine, and also the various sorts of iron. A complete working model of a mine with reduction works is also promised. In the state building will probably be a mantel of rough beaten native copper and also a pillar of the same material, and the copper ore will be so chosen as to show the native silver that is often found with the copper.

The exhibit of the harness-makers, which is in charge of the Wholesale Saddlery Association, will include not only a trade exhibit, embracing specimens of the finest work, but also a collection of harness, trappings and cognate things, showing the evolution of the harness industry from early times to the present. The sum of \$35,000 will be expended on this latter feature. In the collection will be a saddle used by Napoleon Bonaparte.

President Nunez of Columbia, it is announced, has declared his intention of being present at the ceremonies dedicatory of the Exposition buildings next October. Sir Julian Paunceforte, British Minister at Washington, will be present to represent Great Britain.

Tree trunks for the colonnades of the Forestry Building have been received from Wisconsin, Montana, West Virginia, California, Indiana, Ohio, Delaware, New Mexico, North Carolina and Connecticut. Thirty of the states will make contributions of this character.

Lieut. Baker, recently Special Exposition Commissioner to Mexico, estimates that fully 10,000 Mexicans will attend the Fair. Throughout Mexico there is a great enthusiasm over the Exposition, and extensive preparations are being made to have that southern republic represented by a splended exhibit.

Of the 75,560,000 feet of lumber required for the Exposition buildings, docks and electric subways, 54,875,800 have been placed. Of iron and steel 39,490,900 pounds, or nearly 20,000 tons, are required. Of this nearly half is in place, and the remainder will all be in position before the first of June.

Naturalists' Agency, 225, High Holborn, London, W.C.

PRICE LIST of Utensils necessary for the collecting of Mammals and Birds' Skins, Reptiles, Fishes, Insects, Shells, &c., &c.

Bicarbolic Acid...	... quart	2/-	Steel Pins for setting butterflies, ... 4/- per 1000
Rectified Benzoline ...	... lb.	2/-	Setting Boards ... 1/- to 3/- each
Boucard's Insecticide ...	... lb.	4/-	Butterfly Nets complete from 1/6 to 5/-
Ammonia ...	...	4/-	Sweeping and Water Nets 2/6
Collecting corked Box ...	from 1/- to 5/- each		Cork in Sheets ... 3/- doz.
Pocket corked box ...	... from 1/-		Magnifying Glasses ... 1/- to 5/-
Corked Box for Museums ...	24/- doz.		Hammers ... 1/6 to 5/-
and glazed, splendid			Naphthaline ... 4/- per lb.
" make" ...	36/- "		Botanical Grey paper ... 6/- ream.
Larger sizes can be supplied.			Folding Umbrella for collecting 10/-
Botanical box ...	from 2/6 to 6/- each		Insects
Pin box, for 12 grosses of different sizes ...	1/6		Steel Perforator for making holes in eggs 1/-
Pin box, with 1,000 pins ...	3/-		Cutting pliers 2/-
Sea compass ...	from 2/- to 50/-		Flat 1/-
Collecting bottles with large opening ...	from 6d.		Arsenical Soap 2/- per lb.
Boucard's tin collecting box with two partitions ...	2/-		Glass Tubes for small insects and shells 1/- doz.
Straight Scissors ...	... from 2/-		Pill boxes for ditto 4/- gross.
Curved ...	2/-		Flax 6d. per lb.
Taxidermist knives ...	1/6		Cotton wadding, per sheet 6d.
Long Forceps ...	3/-		Fishing rods with accessories 2/-
Small ...	1/-		Dredge for collecting shells, &c., 40/-
Insects' Nippers ...	1/6		Taxidermist's case, containing 1 Pair of Scissors, 2 Knives, 1 Lime, 1 Grater, 2 Pliers, 1 Hammer, 1 pair of Forceps, 1 Brush, 3 Gimlets, etc., complete from 12/- to 40/-
Sieve ...	2/-		Shell-emptying with handle from 1/-
Blowpipe for cleaning eggs ...	2/-		
Digger ...	2/- & 4/-		
Folding ditto ...	6/-		
Insect Pins, English, French or German ...	from 1/6 per 1000		

All other utensils for Naturalists can be had at a short notice, by ordering at the NATURALISTS' AGENCY.

STANDS, NEW STYLE.

No. 1. for Humming birds and Small birds	... ... ...	at 20s per hundred.
2. " Small birds up to Tanagers	... ... ...	24s
3. " Tanagers up to Magpies	... ... ...	28s
4. " Magpies up to Crows or Small Hawks	... ... ...	32s
5. " Small Hawks to Large Hawks and Owls	... ... ...	40s

ARTIFICIAL EYES.

Black per gross.	Coloured per gross.	Cornered		Cornered and Veined per doz. pairs
		per doz. pairs	per doz. pairs	per doz. pairs
No. 1 to 4 6d	1s 6d	No. 4 to 6 3s 6d	4s 6d	
5 " 8 8d	2s 6d	7 " 8 5s 0d	6s 0d	
9 " 10 1s 0d	4s 0d	9 " 6s 0d	8s 0d	
11 " 2s 0d	5s 6d	10 " 7s 0d	9s 0d	
12 " 2s 3d	7s 0d	11 " 8s 0d	10s 0d	
13 " 2s 6d	10s 0d	12 " 9s 0d	11s 0d	
doz. of pairs				
14 " 3s 0d	1s 6d	13 " 10s 0d	13s 0d	
15 " 3s 6d	2s 6d	14 " 11s 0d	13s 0d	
16 " 4s 0d	2s 6d	14 " 13s 0d	15s 0d	
17 " 8s 0d	3s 0d	Larger sizes can be made		
18 " 12s 0d	4s 0d	to order.		

No. 1 to 4 are good for humming birds and others up to the size of Tanagers.

No. 5 to 8 Tanagers to Magpies.

No. 11 to 12 Pheasants, &c.

No. 9 to 10 Magpies to Gulls.

No. 13 to 18 Hawks, Owls Herons, &c.

Ethnological Specimens and Curios from Madagascar, Gold Coast, New Guinea, Mexico, Central America, &c., &c., at very reasonable prices.

A magnificent Collection of Woods from all parts of the world. 2,000 varieties. Fifty years work. Will be sold at a bargain.

Fourteen species of Carabas from Chili. In the most perfect condition. 23 specimens at 5s. each.

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The celebrated Winter Resort on the Riviera, 40 Minutes
from MONACO.

1° VILLA MARIA LUIGIA.

A charming residence, standing in its own grounds, situated CORSO LEVANTE on one side and the BEACH on the other, at about 15 minutes walk from the centre of the town and 20 from the station. Splendid view in all directions, beautiful gardens of about 2,000 mètres, in which a large space has been laid purposely for *lawn tennis* and other games.

Carriage and private entrances.

Gymnastic, Summer Houses, Aviary, Bathing Cabin, &c.

Excellent Water.

Ground Floor.—Three fine rooms, full south, with 7 bay windows opening on the Garden, Kitchen, Offices, Cellar, &c.

First Floor.—Five large and fine rooms, three full south, two on the north side, all of them communicating. Magnificent for Receptions, Soirées, &c. Cloak Room.

Second Floor.—Seven large rooms, four full south, one of them with dressing-room, three fine rooms on the north side. Cloak Room. Corridor in the middle.

Size of Villa: length 18 mètres, width 10 mètres.

Price	francs 60,000
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2° VILLAS RONDO 25, 27, CORSO GARIBALDI.

Two semi-detached Villas, full south, standing in their own grounds of 1,000 mètres, situated on the CORSO GARIBALDI, (the most pleasant walk of the town) hardly at 10 minutes walk from the central part of the town and 15 of the station.

No. 25.—*Ground Floor.*—Three fine rooms, Kitchen, Office, and Cellar.

First Floor.—Six comfortable rooms.

No. 27.—Exactly the same, with Underground floor containing kitchen and two large rooms. Front and back gardens.

Price for the two villas	..	..	..	..	francs 45,000
Separately—No. 25	..	..	..	..	francs 25,000
No. 27	..	..	..	..	francs 30,000

3° A PIECE OF LAND ABOUT 350 METRES.

Full south, on the CORSO MEZZOGIORNO, two minutes from the station and the port, in the central part of the town. Splendid position.

Price	francs 15,000
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For further information apply to—

A. BOUCARD, 225, High Holborn, London, W.C.

Two of the Villas, the smallest and the largest, are actually let Unfurnished for several years at 3,600 francs yearly; but they would fetch more if Proprietor was not abroad. It is expected that, if properly attended, an Income between £200 and £300 yearly could be secured, and more if let furnished.

VOL. II., No. 7.]

JULY, 1892.

[PRICE SIXPENCE.]

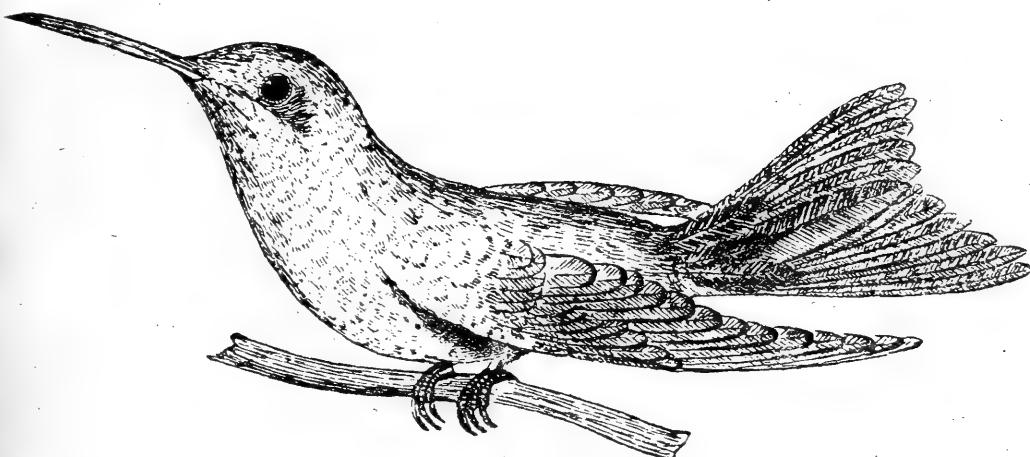
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD



Arinia Boncandi

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All possessors of such objects should not dispose of them without consulting Messrs Boucard, Pottier et Co., who having a large connection with Amateurs in all parts of the world, are able to get the very best prices for them.

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Villa Rondo n° 25, corso Garibaldi, consists of two floors, with nine rooms, kitchen, office and cellar. N° 27 has two kitchens and two more rooms on the underground floor.

Villa Maria Luigia and *Villa Rondo*, n° 25, the smallest, are actually let unfurnished, 3,800 francs per annum, for several years. — *Villa Rondo* n° 27, is worth 1,200 francs. When let furnished, they produce about £ 400 per annum.

All applications to be made at 225, High Holborn, London, W. C. (England), where photographs of the Villas can be seen.

The Humming Bird

DESCRIPTION D'UNE ESPÈCE NOUVELLE DE DIPTÈRE PARASITE DE COSTA RICA

Par M. J. BIGOT.

Genre *ORNITHOMYIA* (*sensu* Latreille, Macquart, Rondani, Bigot).

O. Geniculata, nov. sp. J. Bigot.

Long. ♂ 9, ♀ 10 millimètres.

♂ *Haustello* *palpisque fulvis, antennis, ejusdem coloris, nigro setosis, oculis fulvis, late nigro notatis, capite fulvo, facie utrinque carinata, tergo nigro nitido, antice, utrinque, maculâ latâ, quadrata flavâ, lineâque angustâ fulvâ, medianâ, pictis; scutello flavigo, nigro setoso; pectore flavigo; abdomine obscurè-fusco sat dense nigro velutino; pedibus pallidè fulvis, nigro parçè setosis, geniculis nigris; alis pallidissimè fulvidis, venis nigris, transversâ internâ pallidâ. ♀ Paulo majore, abdomen, latiore, bilobato, oculis omnino fulvis, scutello fusco nigro, et nigro setoso.*

♂. Pipette et palpes fauves, antennes fauves à soies noires; tête fauve, face avec deux fortes carènes latérales et longitudinales; les yeux fauves avec une grande et longue macule noire; *tergum* luisant, noir, en avant; de chaque côté, une grande macule quadrangulaire, et, au milieu, une fine ligne médiane, longitudinale, jaunâtre; écusson jaunâtre à soies noires dissimées; flancs et poitrine fauves; abdomen d'un brun noirâtre, assez densément, mais très brièvement muni de poils bruns; pieds d'un jaune fauve pâle avec quelques soies noires clair-semées, genoux noirs, tarses avec les segments basilaires munis, à leur extrémité, de nombreuses et courtes soies noires; ailes d'un brunâtre fort pâle, les nervures noirâtres, sauf la transversale interne d'un blanc jaunâtre pâle. — ♀ Taille un peu plus forte; abdomen large, bilobé; les yeux uniformément fauves; écusson d'un noir luisant. — ♂ 2 spécimens; ♀ 1 spécimen.

Trouvé sur un *Pharomacrus costaricensis*, tué par M. Bouchard à Costa-Rica, Amérique Centrale.

To the memory of the most Illustrious
CHRISTOPHER COLOMB
1492-1892.

COMPLETION OF THE PANAMA CANAL
By A. BOUCARD

INTRODUCTION

There are two projects for the completion of the Panama Canal, both protecting the interests of the original Share and Bond holders and leaving this valuable property in their own hands, if they choose.

Further on, I give an explicative notice of these two projects and I have not the least doubt that, if the original Bond and Share holders, know their own interests and help me thoroughly in the campaign which I am undertaking for *the Raising up of the Panama*, works can be resumed, not later than the 1st of January 1893.

The author of this pamphlet free of all parties, and all projects, excepting his own, is one of the largest Title holders, titles which he bought mostly when every one had the most entire confidence in the words of *Baron Ferdinand de Lesseps*.

In the purchase of these titles, he employed nearly all his wealth, painfully acquired after thirty years of scientific and industrial works.

When the breaking up of the Company came to pass, he was obliged to begin afresh, and to resume his scientific and industrial works, but what would have been a great misfortune for many has not been so for him; because he is one of those, who cannot remain inactive, and although very busy in directing his scientific and industrial undertakings, he found sufficient time yet to study the Panama question and to publish some adequate notices on the Canal during the year 1891 (1).

The author was in scientific exploration in Panama when

(1) See *Humming Bird*, 1891, pages 3, 10, 20, 29, 44 and 97.

the Commission presided by M. Napoleon Wyse Bonaparte arrived for the first time in the Isthmus, to study the routes where the Canal was feasible. He has travelled and explored the greater part of North America, Mexico, and Central America. He has crossed Cape Horn, and remained sometimes in Chili. He knows well all these countries and has been able to appreciate to its full value the importance of a direct communication between the two Oceans.

In 1878, he was the delegate of the Republic of Guatemala at the International Geographical Congress of Paris, where the question of the Panama Canal was first studied.

Since, he has followed with the utmost attention all what has been done, either at Paris or in Panama, about the Canal, and more exclusively so, to a commercial point of view, and he is convinced that even if the Nicaragua Canal is done one day, the Panama Canal will be yet a good stroke of business, commercially speaking, and before long the net income of the two Canals will be in proportion to the efforts and costs made. He is certain that one day or another the two Canals will be made and opened to the traffic, to the satisfaction of the entire world, and an agreement will probably be made by the two Companies for the exclusive use of one of the Canals for the ingress from one Ocean to the other, and the other for the egress.

But there is a great advantage to conclude at once the Panama Canal, which is already nearly half done, and can be certainly opened, at the latest, the first of January 1900, and the author hopes to be one of those who will assist to this solemn Inauguration, which will leave its mark in the history of the *twentieth Century*.

I have only a few more words to say. According to telegraphic messages just arrived in London, His Excellency Don Raphael Nunez, President of the Republic of Columbia, is expected at Chicago in October next for the official Inauguration of the International Exhibition. For one who knows how to read between the lines, it is certain, *if this news is true*, that M. Raphael Nunez, one of the most distinguished Diplomats of the day and the most eminent personality of Columbia, entirely devoted to the interests of his country, is not doing such a long journey, at his comparatively mature age, simply to assist to the festival ceremonies of the Inauguration of the Chicago Exhibition.

It is much more probable that having lost much of his faith in the possibility of the completion of the work by the International Panama Company, directed in Paris, he made up his mind to go to Chicago and there to confer with the American Government or with the American Capitalists with the intention to pass, with them, a preliminary treaty valuable immediately after the caducity of the one passed with the Panama Company, if this should come to happen.

But in this, I foresee a difficulty, which, if my memory is not failing me, prevents either M. Raphael Nunez, the Americans or any other to come to a satisfactory conclusion, without the assent of the Panama Company, first obtained.

During my stay in the United States and in Panama, I have known some of the high personalities who directed at that time the Panama Railway Company, and when the Commission presided by M. Wyse Bonaparte came to Panama in 1876-1877, I was there as I said before, and I spoke many and many times with the Directors and Inspectors of the Panama Railway Co., and I remember, as if it was only a few days ago, that all these gentlemen always told me that no Canal could be made for sixty leagues, above or under the line of the railway, without the assent of the Company.

That was the chief reason why, after selecting the actual site for the Canal, baron de Lesseps was compelled to buy the Railway Company, purchase which I have always considered as the best stroke of business made by the Panama Canal Company.

Actually, the Panama Canal Company is the owner of the Railway with all its charges and privileges. *Therefore no one can continue the works of the Canal without the assent of the Panama Canal Company, first obtained.*

For my part, I shall defend this point to the last, and I hope that the majority of the Panama Share and Bond holders will support me in this revendication, if it was necessary.

It is possible that the Panama Canal Company will have to abandon all its properties, machinery, etc., existing at Panama, but no one can compel the said Company to lose its rights without a very substantial compensation, and it is to obtain the said compensation, if it should come to that, that I put myself entirely at the disposal of the Panama Title holders.

TABLE OF DISTANCES
IN NAUTICAL MILES
BETWEEN THE PRINCIPAL PORTS OF THE WORLD

Via Cape Horn,

*Strait of Magellan, Cape of Good-Hope
and Canal of Panama*

*Showing the great advantage for sailing ships and steamers
in passing via Panama.*

BETWEEN		Via Cape Horn per sailing ships	Strait of Magellan per steamers	Cap de Bonne-Espérance	Via Panama	Gain for sailing ships	Gain for steamers
Havre							
Anvers	} et San-Francisco . . .	15 620	13 494	7 627	7 983	5 867	
Londres	} Liverpool						
	Acapulco	11 875	11 875	5 765	5 765	6 110	
	" Mazatlan	12 357	12 357	6 293	6 293	5 962	
	" Guayaquil	10 620	10 620	5 947	5 947	4 676	
	" Callao	9 960	9 960	6 464	6 464	3 493	
	" Valparaiso	9 380	8 760	7 734	7 734	4 025	
	" Honolulu	13 610	13 610	9 437	9 437	4 472	
	" Yokohama	14 505	14 505	11 947	11 947	2 583	
New-York	et San-Francisco	15 650	13 474	5 000	10 650	8 174	
	" Sitka	14 439	14 439	6 277	6 277	8 162	
	" Détr. de Behriug	15 705	15 705	7 495	7 495	8 210	
	" Acapulco	11 555	11 555	3 438	3 438	8 417	
	" Mazatlan	12 087	12 087	3 768	3 768	8 319	
	" Hong-Kong		13 750	10 785	2 965		
	" Yokohama		15 217	9 320	5 897		
	" Melbourne	13 760	12 860	12 830	9 963	3 795	2 895
	" Honolulu	15 480	13 290	12 830	9 963	3 795	2 895
	" Guayaquil		10 300	6 580	8 900	6 710	
	" Callao		9 640	3 600	7 217	5 040	
	" Valparaiso	9 420	8 440	4 870	4 550	3 570	
Nouv.-Orl.	et San-Francisco	16 000	13 539	4 230	11 770	9 309	
	" Acapulco	11 920	11 920	2 968	2 968	8 952	
	" Mazatlan	12 402	12 402	2 998	2 998	9 404	
	" Callao	10 005	10 005	2 884	2 884	7 121	
	" Valparaiso	8 805	8 805	4 154	4 154	4 654	

FIRST PROJECT

Project of subscription for the formation of an anonymous Company, hereafter known as the Interoceanic Columbus Canal Company for the completion of the Canal, known as the Interoceanic Panama Canal Company.

Capital : forty millions of pounds sterling, in two millions of £ 20 shares which are now offered for subscription, payable as follows : 10 shillings on application, 10 shillings on allotment, and the balance by calls of 40 shillings per share, at intervals of not less than six months, part of the payment in cash, the rest in Shares or Bonds of the Company in liquidation, known as the *Compagnie Universelle du Canal Interoceanique de Panama*, on the following bases :

Shares at £ 5 each ;

Bonds 5 0/0 at £ 8 16^s each ;

Bonds 3 0/0 at £ 6 each ;

Bonds 4 0/0 at £ 6 12^s ;

Bonds 6 0/0 at £ 8 16^s

indistinctly, excepting those for which a sum has been deposited for the repayment of same.

Bonds with *primes* (obligations à lots) *wholly paid*. £ 8, 16 shillings.

Bonds 6 0/0, payment warranted by a deposit of French rents will also be accepted at £ 8, 16^s, if it is possible to get back the deposit now existing in the hands of the Civil Society.

The Bonds with primes (bons à lots) which are warranted by sums deposited at the Crédit Foncier, will also be accepted at £ 4, if the deposit can be returned to the new Company. The obligations with primes remaining in the hands of the liquidation will be annulled.

From this source, a sum of 38 millions 744.602 francs 96, deposited with the Civil Society, on account of these Bonds, could be had back ; as also 388.644 francs 23 cent., due by that Society to the Liquidation of the Panama Company, according to accounts rendered on the 31 of December 1891, if that sum has not been repaid already.

The Share and Bondholders can subscribe as many new Shares of £ 20 as they have of the old stock, in the following proportions :

For every two Shares, one Share of the new Company ;

For one Bond 5 0/0, one „ „ „ „ „

„ two Bonds either 3 0/0 et 4 0/0, one „ „ „

„ one Bond 6 0/0, one share „ „ „ „

„ one Bond with primes, fully paid, one share „

On the day of subscription, the bearer of two Panama Shares will deliver them to the new Company, in exchange of a receipt of £ 5 each, or £ 10 for the two, to be deducted from the total amount due for the share of the new Company. Then he will have to pay ten shillings on the day on application, ten shillings on allotment, and sixteen shillings and five pence, instead of £ 2, on each call, every six months.

The same will be done with the Bonds 5 per 100, 3 per 100, 4 per 100, 6 per 100 and the Bonds with primes, fully paid. As a compensation for the acceptance of the Panama Shares and Bonds at the prices fixed above, the Share and Bondholders forsake, of their own free will, the amount of the dividends due since the last three years, as well as their Shares and Bonds, which will be destroyed.

The Bonds with prime in the hands of the Liquidation will be *annuled*.

The Liquidation will deliver immediately to the new Company, after its formation, all the assets existing, either in Paris or in Panama, including the Shares of the Panama Railway Company, the whole becoming the absolute property of the new Company.

By this mean, all the assets of the Panama Co will remain in the hands of the original Panama Bond and Shareholders, who are certain to make good all their losses in a specified time.

By the following calculation which has been done with care, it is easy to see that although every thing remains in the hands of the Panama Bond and Share holders, the new Company will be able to realize a sum varying between 500 and 600 millions of francs, perhaps more, a sum which is quite sufficient to resume work and complete the Canal.

Besides, the total amount of cost for the Canal being reduced to one milliard of francs, it will become again a good investment, and the holders will receive a good revenue from the date of the opening of the Canal, and will keep in their own hands a property, which will be one day so valuable, that it is quite impossible to have an idea of its magnitude.

Table representing the value of the Panama Shares and Bonds received in payment by the new Company.

600.000 Shares at £ 5.	£ 3.000.000.
250.000 Bonds 5 per cent at £ 8.16s. . . .	2.200.000.
600.000 Bonds 3 per , at £ 6.	3.600.000.
477.387 Bonds 4 per , at £ 6.12. . . .	2.912.060.11 ^s
438.802 Bonds 6 per , 1st serie at £ 8.16	3.861.457.12
258.887 Bonds 6 per , 2d serie at £ 8.16	2.275.205.12
Total.	£ 17.856.723.45

This leaves at the disposal of the new Company the sum of £ 22, 143, 276, 5^s.

The Bonds 6 per 100 3d serie, the Bonds with primes fully paid, the Bonds with primes, 110 francs paid, are not included in this account, because the first and last ones represent about the same amount deposited with the Civil society. As to the Bonds with primes, fully paid, I believe that they are very few and would not alter much the sum acquired by the new Company.

To meet this total of £ 22, 143, 276, 5^s, the holders of the Panama Shares and Bonds will have to pay every six months very small sums as explained in the adjoining table.

2 Shares of £ 20 (*which have actually lost all their rights*) will be received in payment by the new Company, at £ 5. 10.

1 Bond 5 0/0 subscribed at 437 fr., 50	8.16.
2 Bonds 3 0/0 at 285 fr., at £ 6 each	12.0.
2 „ 4 0/0 at 333 fr., at £ 6 ^s 12	13.4.
1 „ 6 0/0, first serie at 450 fr., £ 8. 16	8.16.
1 „ 6 0/0, 2 ^d at 440 fr., at £ 8. 16	8.16.
1 „ 6 0/0 3 ^d serie warranted, at £ 8. 16.	8.16.
1 „ with prime (fully paid), at 440 fr., 8. 16.	8.16.

Consequently, 2 *Shares of £ 20* will have the right to subscribe to 1 Share of the new Company, payable as follows :

2 PANAMA SHARES received in payment at £ 5.	10. 0.
Subscription.	0.10.
Allotment	0.10.
11 Calls from the 1 st July 1893, to 1 st July 1898 inclusive, at 16 ^s 4 $\frac{1}{2}$ —	9. 0.
Total.	£ 20. 0.

1 BOND 5 0/0 will have the right to subscribe to 1 Share of the new Company as follows :

1 BOND 5 0/0 received in payment, for.	£ 8.16.
Subscription.	0.10.
Allotment	0.10.
11 Calls from 1 st July 1893 to 1 st July 1898 inclusive, at 10 shillings 8 d.	10. 4.
Total.	£ 20. 0.

(*To be continued.*)

Naturalists' Agency, 225, High Holborn, London, W.C.

PRICE LIST of Utensils necessary for the collecting of Mammals and Birds' Skins, Reptiles, Fishes, Insects, Shells, etc., etc.

Bicarbolic Acid...	quart	2/-
Rectified Benzoline...	"	2/-
Boucard's Insecticide ...	lb.	4/-
Ammonia ..	"	4/-
Collecting corked box from 1/- to 5/- each		
Pocket corked box... ...	from	2/-
Corked Box for Museums		24/- doz.
— — and glazed, splendid make...		36/- ,,
Larger sizes can be supplied.		
Botanical box ...	from	2/6 to 6/- each
Pin box, for 12 grosses of diffe- rent sizes		1/6-
Pin box, with 1,000 pins...		3/-
Sea compass	from	2/- to 30/-
Collecting bottles with large opening.		from. 6 d.
Boucard's tin collecting box, with two partitions		2/-
Straight Scissors...	from.	2/-
Curved	"	2/-
Taxidermist knives		1/6
Long Forceps		3/-
Small	"	1/-
Insects' Nippers...		1/5
Sieve		2/-
Blowpipe for cleaning eggs...		2/-
Digger		2/- et 4 -
Folding ditto		6/-
Insect Pins, English, French or German	from	1/6 per 1000

All other utensils for Naturalists can be had at a short notice, by ordering at the NATURALISTS' AGENCY.

STANDS, NEW STYLE.

No. 1. For Humming birds and Small birds	...	...	at 20s per hundred
,, 2. " Small birds up to Tanagers	...	...	24s "
,, 3. " Tanagers up to Magpies...	...	...	28s "
,, 4. " Magpies up to Crows or Small Hawks	...	...	32s "
,, 5. " Small Hawks to Large Hawks and Owls	...	...	40s "

ARTIFICIAL EYES.

Black	Coloured	Cornered	Cornered and veined
per gross.			
No. 1 to 4 6d	1s 6d	No. 4 to 6 3s 6d	4s 6d
" 5 " 8 8d	2s 6d	" 7 " 8 5s 0d	6s 0d
" 9 " 10 1s 0d	4s 0d	" 9 " 6s 0d	8s 0d
" 11 2s 0d	5s 6d	" 10 7s 0d	9s 0d
" 12 2s 3d	7s 0d	" 11 8s 0d	10s 0d
" 13 2s 6d	10s 0d	" 12 9s 0d	11s 0d
doz. of pairs			
" 14 3s 0d	1s 6d	" 13 10s 0d	13s 0d
" 15 3s 6d	2s 6d	" 14 11s 0d	13s 0d
" 16 4s 0d	2s 6d	" 15 13s 0d	15s 0d
" 17 8s 0d	3s 0d	Larger size can be made to order.	
" 18 12s 0d	4s 0d		

No. 1 to 4 are good for Humming Birds and others up to the size of Tanagers.

No. 5 to 8 Tanagers to Magpies.

No. 9 to 10 Magpies to Gulls.

No. 11 to 12 Pheasants, etc.

No. 13 to Hawks, Owls, Herons, etc.

Ethnological Specimens and Curious from Madagascar, Gold Coast, New-Guinea, Mexico, Central America, etc., etc., at very reasonable prices.

A magnificent Collection of Woods from all parts of the world. 2,000 varieties. Fifty years work. Will be sold at a bargain.

Fourteen species of Carabus from Chili. In the most perfect condition. 23 specimens at 5s. each.

BOUCARD, POTTIER & C⁰.,

Naturalists and Feather Merchants,

225, HIGH HOLBORN, LONDON, W.C., ENGLAND

MESSRS BOUCARD, POTTIER, and C⁰., offer to sell on commission all kinds of objects of Natural History, Collections of Mammal and Bird, Skins, Skeletons, Human and Animal Skulls, Insects of all orders pinned and set, or in papers; Marine, Fresh Water and Land Shells; Reptiles and Fishes in spirit; Crustaceæ and Arachnidæ in spirit; Ethnological collections from all parts; Showy Bird Skins and Feathers for Plumassiers and Naturalists; Mammal Skins for Furriers; Bright species of Insects for Artificial Florists; Rare old Stamps, used and unused; Curious of all sorts; Pictures and Works of Arts, etc., etc., etc.

All possessors of such objects should not dispose of them without consulting Messrs Boucard, Pottier et C⁰., who having a large connection with Amateurs in all parts of the world, are able to get the very best prices for them.

IN STOCK.

About **6,000** species of Birds, **30,000** of species Coleoptera and Lepidoptera, Mammal Skins, from New-Guinea, West Africa, South America, etc., Land, Fresh Water, and Marine Shells, *a large number of species*; Reptiles and Fishes in spirit; Crustaceæ, dried and in spirit; Insects of all orders, Skeletons, etc., etc.

NEW COLLECTIONS ARE RECEIVED CONSTANTLY FROM ALL PARTS OF THE WORLD.

FOR SALE.

A very fine collection of Shells, especially rich in **LAND SHELLS**, and containing *many types* and *new species*, about 40,000 specimens. For Price, etc., apply at 225, HIGH HOLBORN, LONDON, W. C.

POSTAGE STAMPS.

FOR SALE.

A large variety of rare Stamps and New Issues from all parts of the World. For Prices, etc., apply to NATURALISTS' AGENCY, 225, HIGH HOLBORN, W.C.

WANTED TO BUY.

Old collections containing from 500 varieties upwards, to which none have been added since the last 20 years. Old stamps on their original letter sheet or envelope, especially Colonials and old German States; Mulready Wrappers and Envelopes; Old unused English and Colonials; Old Works on Stamps; Proofs of Stamps, etc., etc.

TO BE SOLD OR EXCHANGED

For Properties of equal value in London, Brighton, or the Isle of Wight.

SEVERAL PROPERTIES AT SAN-REMO

The celebrated Winter Resort on the Riviera, 40 Minutes from MONACO.

Three Villas, known as *Villa Maria Luigia*, and *Villas Rondo*: the first one, detached with a beautiful garden of 2,000 mètres; the last, semi-detached with front and back gardens. *Villa Maria Luigia* consists of three floors, with fifteen fine rooms, offices, kitchen, etc. Ten of the rooms are full south, facing the sea.

Villa Rondo n° 25, corso Garibaldi, consists of two floors, with nine rooms, kitchen, office and cellar. N° 27 has two kitchens and two more rooms on the underground floor.

Villa Maria Luigia and *Villa Rondo* n° 25, the smallest, are actually let unfurnished, 3,800 francs per annum, for several years.—*Villa Rondo* n° 27, is worth 1,200 francs. When let furnished, they produce about £ 400 per annum.

All applications to be made at 225, High Holborn, London, W. C. (England), where photographs of the Villas can be seen.

Now I give the account of the sums to be received by the new Company, since its formation, up to the 15th of July 1898, date of the last call.

On the 1st of January 1893.

300,000	Shares subscribed by the holders of			
	600,000 Panama Shares, at 10/—.	£ 150.000		
250,000	Shares subscribed by the holders of			
	250,000 Bonds 5 0/0, at 10 /— .	125.000		
300,000	Shares subscribed by the holders of			
	600,000 Bonds 5 0/0, at 10 /— .	150.000		
238,694	Shares subscribed by the holders of			
	477,387 Bonds 4 0/0, at 10 /— .	119.847		
438,802	Shares subscribed by the holders of			
	438,802 Bonds 6 0/0 1 st Serie, at 10 /—	219.401		
258,887	Shares subscribed by the holders of			
	258,887 Bonds 6 0/0 2 ^d Serie, at 10 /—	129.443		
1,786,383	Shares	Total.	£ 893.691.10	
On the day of allotment, February 1 st 1893.				
		Total.	893.691.10	
		Total.	1,787.383.00	

1st July 1893.

Call. on 300,000 Sh., at 14,6 $\frac{1}{2}$ = £ 246.000	11 Cal. £ 2.708.000
» 250,000 » at 18/8 = 233.200	» 2.565.200
» 300,000 » at 12/8 $\frac{1}{2}$ = 196.000	» 2.150.000
» 238,694 » at 10/6 $\frac{1}{2}$ = 126.004 8/8 »	1.386.048 15/4
» 438,802 » at 18/8 = 407.208 5/1 $\frac{1}{2}$	4.479.290 6 4 $\frac{1}{2}$
» 258,887 » at 18/8 = 240.247 2/4	2.642.718.10.3
Each call = 1.448.659.16.1 $\frac{1}{2}$ £ 15.931.257.11.11 $\frac{1}{2}$	
Besides 213.617 Shares remain in the hands of the Company. At £ 20 each, they represent a sum of	
	4.272.340 »
Total. £ 20.203.597.11.11 $\frac{1}{2}$	

Which gives the following grand total :

Subscription.	£ 893.691.10
Allotment.	893.691.10
Eleven calls on Shares	15.931.257.11 $\frac{1}{2}$
Amount of 316,619 Shares, at £ 20	4.272.340. 00
Total.	£ 21.990.980. 1.11 $\frac{1}{2}$

A sum which I consider more than sufficient to cover all the expenses and to pay an interest of 30/0 per annum on all the sums subscribed, either in cash, or in Shares and Bonds of the old Company.

For the payment of the said interest, the Company will require a sum of about £ 3.000.000; but I think that by investing judiciously part of the money received, and not immediately necessary, a good income could be made out of it, and reduce considerably the sums to pay as interests.

It is also probable that a combination exists, by which in investing part of the capital, as received, and laid by for the last payments, enough could be made to pay nearly all the interests due during the completion of the work.

Now about the cost of Promotion of the Company : Emission, Publicity, Direction, Printing, Delivery of Shares, Payments of interests, etc., « all of which have been excessive with the Panama Canal Company », I really think that it can be done at a very reasonable price.

If we take as a basis, the last report published by the Civil Society for the repayment of Bonds and payment of primes, we find recorded in the *Assets* for 1891 :

Expenses on money received	fr. 4.579 52
Expenses of direction and allocation to Commissioners	18.824 20
Paid to Crédit Foncier for the safe keeping of Titles	9.336 75
 Total.	 fr. 32.740 47

Or a little over £ 1.300, which seems to me very moderate charges, and I don't see why the New Company could not do the same. Perhaps an arrangement could be made with that Society to take charge of the comptability of the New Company.

The same could be done in Panama by taking care to appoint competent persons, always giving the preference to holders of the new Company Shares.

The payment to Directors could be, at first, limited to £ 400 yearly, until a dividend of 100/0 should be paid to the Shareholders. When that time comes, 10 0/0 of the surplus dividend will be divided between the Directors, and from the rest, half will be put to a reserve fund, and the other half divided between the Shareholders.

As to Publicity, the expenses will be reduced to their extreme limit. Several thousands bills and some appropriate notices in the newspapers sympathetic to the Panama, such as : *le Petit Journal*, *le Petit Parisien*, *la France*, *la Paix*, etc., would be sufficient.

An official weekly paper should be edited at once by the new Company, after its formation, and sold at the moderate price of $1\frac{1}{2}$ d. or 4 shillings yearly.

This paper dedicated exclusively to the business of the new Company will keep the Shareholders well informed of all what is being done in Paris and in Panama, and will be the indispensable tie between the Shareholders and the Company, replacing profitably the ordinary annual meetings of Shareholders. A meeting of these last should be called only in case of absolute necessity.

If the Boards of Directors should agree that for the promoting of the Company, it is necessary to apply to Bankers, it will be stipulated with the said Bankers that a commission of $\frac{1}{4}$ per cent shall be paid to them on all sums received for the account of the Company. £ 50.000 will be required to pay the said commission on twenty millions pounds sterling.

As will be seen by what precedes, the author has had only in view to prove that it is possible, and easy, to get the necessary sums for the completion of the Canal. He has not said one word about the technical part of it, which belongs by right to the *Engineers*, firstly because he understands nothing about it, and secondly because he thinks that it has been done thoroughly well by the various Commissions of Engineers sent in the Isthmus for that purpose, and especially so, by the last one, sent by the Liquidation, and whose Reports have been published and are well known by all.

Now I give a list (1) of the competent persons, well known for their patriotism, and who would probably accept the formation of the new Company for the completion of the Canal, and whose personalities would probably be acceptable to all the Panama Bond and Shareholders, knowing well that if their concourse can be secured, the success is certain.

COMMITTEE OF DIRECTION

Mssrs CHRISTOPLE,
BOUCARD,
HENNET DE GOUTEL,
MARINONI,
RYLSKI,
MÉNIER,
WYSE BONAPARTE,
RECLUS,
SOSA,
TBIÉBAUD,
BUNAU-VARILLA, etc.

(1) This list can be altered or modified according to the will of the majority of the Panama Titleholders.

Immediately after the formation of the new Company, a special Delegate, with full powers, will be sent to Colombia to confer with the Columbian Government and negotiate a modification to the last treaty concluded with Mr Wyse Bonaparte, by which the Colombian Government should renounce to the payment of ten millions of francs asked from the new Company, and prorogate to twenty years the time allowed to the new Company for the termination of the Canal ; not because it is absolutely necessary, but to free the Company from the exigences of several Contractors, who may be ready to take advantage of the Company if they think that they are indispensable.

In compensation for this, the new Company shall give to the Columbian Government, 10.000 Shares (free of all costs) and bearing the same interest as the ordinary Shares. The amount to be paid in interest on these Shares from January 1893 to January 1900 would amount to about three millions of francs.

Besides that, a small part of the profits should also be offered to the Columbian Government.

It would be a very fair remuneration given to the Columbian Government, for maintaining the Security in the Isthmus during the completion of the Canal, and all the other services rendered by the said Government to the Company.

This first project is the best in my opinion, because work could be resumed immediately after the formation of the new Company, and would guarantee the opening of the Canal for the first of January 1900.

Since the publication of the first part of this pamphlet, the Bulletin Officiel du Comité Central des Actionnaires et Obligataires de Panama, 15 June 1892, has published an extract of a work by Mr Rylski, Engineer, entitled le **Canal à niveau pour 220 millions.**

I have studied this extract with the greatest care, and I am of the same opinion as the Redaction of the Bulletin du Comité.

Here is the solution of the problem.

I can speak knowingly of this, having travelled in California in all the countries where these hydraulic works are carried on for the desagregation of the mountains and the washing of the auriferous soil of these parts.

By these means, mountains of great magnitude have been transformed in plains in a short time and at a very small cost.

There is no doubt whatever that the application of hydraulic machines can be successfully employed at Panama, and it is with stupefaction that I have heard that on the 21th of December 1886, Mr Rylski proposed to the Director of the Panama works to employ that method for attacking the

Culebra, and that his, proposition was not accepted by the said Director. If it had been accepted, the opening of the Canal should certainly have been inaugurated in 1889.

It is therefore important to investigate it thoroughly and to accept it, if Mr Rylski can prove that it can be done, and is willing to undertake the work. An economy of at least two hundred millions of francs could be realized and the Completion of the Canal secured for the year 1899, or at the latest, the 1st of January 1900.

It is intended to call a meeting of the Panama Share and Bondholders very shortly. Letters of convocation will be sent as early as possible to all the Presidents of the Committees of France, to the Press, and to all the largest Share and Bondholders; but is very important that immediate meetings should be called by all the Presidents of Committees, for the purpose of submitting to the Titleholders all the most important projects, technical and financiers, and to ask them to appoint a special Delegate, with full powers, representing the largest possible number of Shares and Bonds, to attend the general meeting.

In this meeting, all the projects will be examined and the best one adopted, and resolutions will be passed for the formation of a new Company.

It is also important to advice all *Bondholders* not to sell their Titles, but to buy some, if they can. At the actual prices, they are worth less than a third of their value, even in case of bankruptcy.

The Canal must be done by the Panama Bond and Shareholders. *To them alone, it belongs to save the Canal and reap the honor and the profit.* We accept every one with us, and those who are not Share or Bondholders, cannot do better than to invest small or large sums in it, before it is too late.

Several Societies are formed and ready to start a new Company, but I don't see why it should not be done by the Titleholders themselves. By doing so, they would save expenses, and reap all the profits, which these Societies are sure to claim as *Promoters and Savers*?

All the Presidents of the Committees, with whom I have had the honour to correspond lately, are unanimous in saying that all the Share and Bondholders of their region are willing to subscribe to the shares of the new Company, and we can already foresee a subscription, to about 200,000 new shares, by the Titleholders from Paris, Marseille, Bordeaux, Lille, Moulins, Blois, Saint-Germain-en-Laye, etc.

Therefore it is time to be united, and to show that we want to keep all in our own hands. No ABSTENTIONS!

If every one does what he can, and is willing to subscribe according to his means, in a few days, the new Company will be an accomplished fact.

SECOND PROJECT

Subscription exclusively reserved to the Panama Bond and Shareholders.

Project of subscription for the formation of an anonymous Company, hereafter known as the Panama Company, for the developing and cultivating of the property of 500,000 hectares of freehold lands granted by the Colombian Government to the Panama Company.

CAPITAL: Four millions pounds sterling divided in *Four millions of Shares of £ 1 payable as follows :*

4 shillings on application, 4 shillings on allotment, and the remainder by calls of 4 shillings, at intervals of not less than two mouths.

Each Panama Share or Bond has the right of subscription to one share of the Panama Company.

All Panama Bond or Shareholders not having subscribed, at the time of the Emission or at the latest two months after the formation of the Company, will lose their rights, and the Shares not allotted, will be offered preferably to the first Subscribers.

Thus with £ 1, every holder of one Panama Share or Bond will have the privilege of doing a good investment, and will contribute to the termination of the Canal, which will remain the absolute property of the Panama Share and Bond-holders, who are certain to recuperate all their losses within a specified time.

PROJECTED LIST of the Committe of Direction

M^{ssrs} BOUCARD,
RYLSKI,
WYSE BONAPARTE,
RECLUS,
SOSA,
THIÉBAUD,
MÉNIER, etc.

Bankers . . . X.
Offices Paris.

ABRIDGED PROSPECTUS

This Company is formed with the object of developing the property of 500,000 hectares belonging to the Panama Canal Company 250,000 of which are in their hands.

The Panama Estate is of great agricultural value.

Its lands are most prolific for the raising of *Cocoa, Coffee,*

Cinchona (quinine), *Sugar cane*, *Maize*, *Rice*, *Cassava*, *Tobacco*, *India rubber*, *Indigo*, *Cotton*, *Vanilla*, *Plantains*, *Oranges*, *Lemons*, and all species of *Tropical fruits* and *vegetables*, *Medicinal plants*, *Gums*, *Resins*, etc. Many of these plants yield two and three crops yearly. Labour is cheap easily obtained, and transportation inland and abroad very easy and inexpensive. In the United States and in Europe, there is a great demand for plantains and all tropical fruits and produces. Steamers are constantly running and stopping between all the Atlantic ports, and to Europe.

Even if reduced to the growing of coffee, cocoa, tobacco, maize and plantains, magnificent returns could be obtained, as all these goods are in great demand everywhere.

The property abounds also in valuable timber such as : *Cedar*, *Mahogany*, *Ebony* and others, for which there is a constant demand for house building, furniture, and other purposes, and which only require the introduction of saw-mills to be turned to valuable account. The erection of these saw-mills can be done at a very small cost, water being abundant on the property.

Additional sources of income can be derived from the raising of *Cattle*, *Mules* and *Horses*, for which there is a constant demand in the country itself.

There are also on the property valuable ores, such as : *Gold*, *Lead*, *Copper*, *Cinnabar*, etc., from which a large income may be derived afterwards, if it is thought convenient to work them.

It is estimated than within twelve months, the Company will have 5,000 hectares in cultivation, and planted with products yielding rapid returns, at an outlay of £ 100.000.

The following estimate, which is much under the real value will give an idea of the profits to be derived immediately from the first outlay :

2,000 hectares of maize, loads, at 6 shillings or £ 30 per hectare.	£ 60.000.0.0
1.000 hectares plantains, 500 bunches, at sixpence or £ 120 per hectare . . .	120.000.0.0
1.000 hectares cassava, 12 loads, at 10 /— or £ 50 per hectare.	50.000.0.0
1.000 hectares, beans, yams, etc., at £ 40 per hectare	40.000.0.0
	270.000.0.0
Cost of clearing planting cultivating, etc., £ 20 per hectare.	100.000.0.0
Profit.	£ 170.000.0.0

Or 4 per 100 on the whole capital subscribed. The second

year, it is certain that the profits would reach about 8 per 100 on the whole capital of the Company, 10,000 hectares being then under cultivation. During these two years, large plantations of coffee and cocoa covering another 100,000 hectares could be made, so that the third year, besides the 8 per 100 profit, on the whole capital subscribed, there would be the net profit of the first crop of coffee to be added to it, and which could not be less than one million of pounds sterling or another 25 per 100 on the whole capital of the Company.

The fourth year, it is safe to report that the return of coffee alone will be 2 millions, or 50 per 100 of the whole capital of the Company, which makes a grand total of 66 per 100, to which is to be added the amount of the first crop of cocoa, which can be calculated for that year at £ 40 per hectare or £ 4,000,000 for 100,000 hectares, which means another 100 per 100 on the whole capital subscribed. The fifth year, the revenue of the cocoa plantation can be estimated at £ 5,000,000, and each succeeding year £ 50 more per hectare until it reaches the grand total of £ 200 per hectare, or £ 20,000,000 pounds sterling for 100,000 hectares.

The revenue of the coffee plantation would also accrue in the same proportions, up to the fifth year, at which time it would reach the fine total of £ 3,000 per hectare, or £ 300,000 for 100,000 hectares.

In the fifth year the revenue of the Company would be as follows:

10.000	hectares cultivated in plantains,	
	maize, etc., nett profit.	8 per 100
100.000	hectares cultivated in coffee . . .	75 per 100
100.000	— cultivated in cocoa . . .	125 per 100
	Total.	208 per 100

The tenth year, when the plantation of cocoa would give its full crop, the revenue of the Company would be as follows :

10.000	hectares plantains, maize, etc . . .	8 per 100
100.000	— coffee.	75 per 100
100.000	— cocoa.	500 per 100
	Total.	583 per 100

There are no reasons why it should not continue so, for any length of time, as new plantations could always be made, so as to replace the old ones, and always securing full crops.

Now if the Company instead of limiting itself to raising *Coffee*, *Cocoa*, *Maize*, *Plantains* and *Cassava*, should also cultivate *Sugar canes*, *Tobacco*, *Rice* and *Indigo*, it could obtain better results yet ; as competent authorities on these matters have calculated the revenue of 100.000 hectares planted in these commodities, as follows :

In sugar canes.	£ 10.000.000
In tobacco	£ 12.000.000
In rice	£ 4.000.000
Indigo	£ 8.000.000

It has also been calculated, that the products of 100.000 hectares planted in maize, plantains and yucca, would be :

In maize.	£ 6.000.000
In plantains.	£ 10.000.000
In yucca.	£ 4.000.000

Therefore no better commercial enterprise could be offered to the public, and the Directors of the Company, are so confident in the success of the undertaking that they would undertake not to receive any money whatever for the promoting, planting and working of the Company, until a dividend of 10 per 100 has been paid to the Shareholders.

After a repartition of 10 per 100 to the Shareholders, an adequate remuneration should be voted in favour of the Directors, and from the remaining benefit surplus, it is intended to make another repartition of 10 per 100 to the Shareholders, 10 per 100 to the Directors, and the remaining 80 per 100 to be paid, free of charges to the Panama Company for the termination of the Canal.

In consideration of this free gift, the Interoceanic Panama Canal Company would grant to the Panama Company, free of all charges and definitively, two hundred and fifty thousand *hectares* of the lands granted to the said Company by the Columbian Government.

These 250.000 hectares of land, to be selected by the Panama Company, where it likes at any time, according to its wants, in one or several times, at its choice.

Immediately after the opening of the Canal, no more money should be paid to the *Interoceanic Panama Canal Company* and all the profits, less the 10 per 100 attributed to the Directors, would reverse in favour of the Shareholders of the Panama Company. If the Share and Bondholders of the Interoceanic Panama Canal Company accept this second project, in preference to the first, they should communicate immediately with Mr Boucard, the promotor of the two projects, as he intends to start for Chicago, at the latest, in September next, to meet there, with His Excellency

M. Raphaël Nuñez, President of the Columbian Republic, to confer with him about the advisability to extend to twenty years, the time of the prorogation for the termination of the Canal, although M. Boucard thinks that it will be possible to resume work in the Isthmus at once, with the money in the hands of the Liquidation, so as to open the Canal, officially, not later than in January 1900 or before. *Every effort will be made to do so, and to inaugurate the twentieth Century with the opening of this gigantic and marvellous Work of Art, which will certainly open a new Era of greatness, wealth, and prosperity, not only to America, but to all the World, and will be a fit homage rendered to the manes of the immortal CHRISTOPHER COLOMB.*

CHICAGO EXPOSITION

World's Fair Notes.

A monster panorama, 445 feet long and 51 feet high, representing the Bernese Alps, with the Jungfrau in the background, has been painted for exhibition at the Fair. A private exhibition of the work was recently given to the press in Berlin.

Success is already assured to the project which an association, under the auspices of the Board of lady Managers, has of erecting several dormitories where women, especially those of the industrial class, can obtain neat, respectable and cheap living quarters, while visiting the Exposition.

The steamship lines covering the west coast of South America, have agreed to carry government exhibits free and private exhibits at half price, as far as Panama, Passenger rates also have been greatly reduced.

The lofty stone monolith which Wisconsin will exhibit at the Fair, will remain at Jackson park permanently, the commissioners having given their consent. The monolith is 107 feet high and cut from a solid block of stone. The contract for its erection has already been let.

Baron de Jeune's valuable collection of prehistoric relics, it is believed, will be secured for exhibition at the Fair. It comprises many rare specimens from caves in France. De Maret, who made the collection, spent twenty five years in work.

Owing to the recent increase of Great Britain's World's Fair appropriation to £ 300,000. British exhibitors will not be charged for space, as at first determined.

President Diaz has recommended to the Mexican congress that Oct. 12 of this year be made a national holiday in com-

memoration of the landing of Columbus in the new world. He says in his message that the work of collecting the Mexican exhibit is progressing rapidly, and that a display of Mexican troops will be made at the dedicatory exercises.

A company from the national military institute of Columbia, South America, wants to attend the Exposition and camp on the World's Fair grounds. The proposition to give the company camping space in Washington park, close by the grounds, is now under consideration.

A collection of finely mounted birds and animals will be shown in the Pennsylvania building.

It has been already stated that the Pope has promised to use all his influence to promote the Chicago Columbian Exposition. It is now announced that he will appoint a commission charged with preparing a plan whereby the Vatican will be officially represented at the Exposition. It is not thought improbable that a subsidy will be granted by the Vatican.

W.-H.-H. Llowellyn, Executive Commissioner for New Mexico, has been in Chicago securing space in the various buildings for exhibits from the Territories. "We expect to show people who visit the World's Fair", he said, "that new Mexico can raise something else besides cactus and sage-brush. One exhibit will be 100 watermelons, the minimum weight of each of which will be 400 pounds."

The liberation of carrier pigeons and the keeping of a record of their flight will be an interesting feature of the live stock exhibit at the Exposition. A number of breeders of pigeons will exhibit birds, and they are now making arrangements for the proposed contests. George-W. Childs, of Philadelphia, and several others have offered prize for the winners in the contests. The speed record now is 325 milles in 329 minutes.

William Saunders, Executive Exposition Commissioner for Canada, says that a large and excellent exhibit from the Dominion is assured. It will be especially notable in the lines of agriculture, dairying, minerals and manufactures.

It is announced that the Pope has directed that specimens of the beautiful mosaic pictures, made at the mosaic works in the Vatican, shall be exhibited at the Exposition, and that at least one picture shall be made expressly for the Fair.

A carnival of sports, in connection with the Exposition, is contemplated and quite likely to be established. It is proposed to provide a large arena or amphitheatre in which will be enacted, as far as possible, every kind of athletic sport known to the various nations and races of the earth.

Leigh S. Lynch, World's Fair Commissioner to the South Sea Islands, has cabled that he has completed arrangements for exhibit from the Phillipine Islands and is now devoting

his attention to Java. There is every prospect that the exhibit will be one of great interest.

Mr McCormick, the London agent of the Columbian Exposition, has forwarded to Chicago an application from Mrs M.-L. Mullinger, who wishes to establish a gypsy encampment within the grounds of the Exposition, probably upon the Midway Plaisance. Mrs Mullinger is alluded to as being remarkably well versed in gypsy lore, and proficient in gypsy learning. She manages a gypsy encampment near Liverpool, England.

Costa-Rica has one of the largest and finest archaeological collections in the world, showing many Columbian relics and historic data relating to the discovery of America. This collection goes to Madrid this year for the Spanish Exposition and will afterwards go to Chicago.

A circular has been issued by the Exposition authorities to all the railway passenger associations of the United States and individual roads, asking that a materially reduced rate be made by the railroads on the occasion of the dedicatory ceremonies next October. It is believed that 500,000 visitors will be in Chicago from different parts of the country.

The construction of the Exposition buildings is progressing in the most satisfactory manner, and there is no reason for doubt that all will be completed in time for dedication. The rough carpentry work is practically finished on all of the large structures except, Machinery Hall and the Manufacturers' building and on these it is in an advanced stage. Six or seven of the buildings have the exterior appearance almost of finished structures, and look like imposing marble palaces.

Invitations are being sent to distinguished guests to attend the dedication ceremonies of the Exposition next October. The invitation to the President of the United States was presented by a special committee representing both the National Commission and the Directory. The invitation to the President is a very elaborate and beautiful affair. It reads : The World's Columbian Commission invites you to participate in the ceremonies attending the dedication of the building of the World's Columbian Exposition at Jackson Park in the City of Chicago, Oct. 11, 12 and 13 1892, and requests the favor of an early acceptance.

To the President, Benjamin Harrison, Washington. District of Columbia.

Some 20,000 or 25,000 invitations are being sent out. Those receiving them include national, state and territorial officials and many distinguished personages. The invitations sent to these, are finely executed but not nearly so elaborate, as the one to the President.

The model of the "Victory" Nelson's celebrated flag-ship, will be brought to the Exposition by Manager Abud of the Prince of Wales' theatre, London. A part model of the "Vic-

tory", attracted much attention at the recent royal naval exhibition. Mr Abud is now completing the model so that it will represent exactly and completely the famous old war ship, which now lies in Portsmouth harbor.

Messrs Hirst and Jackson, World's Fair Commissioners for Florida, report that the prospect is very promising for raising £ 100,000 for the representation of that State. The interest of the people has been greatly increased by the decision to construct for the Florida building a reproduction of old "Fort Marion", claimed to be the oldest structure on the continent. The building is a very picturesque one. The exterior will be of coquina, a concrete made chiefly of shells and phosphate, and the interior will be finished in Florida woods, of which there are no less than 240 different varieties. In a moat surrounding the fort will be sunken gardens where growing pineapples and the larger fruits will be shown. On the parapets will be hanging gardens to which the full wealth of the flora of the State will contribute. Adjacent to the building will be groves of bamboo and orange and lemon trees.

Visitors to the Exposition will avail themselves of a Bureau of Public Comfort, managed by the Exposition authorities. This will have headquarters in a building on the grounds, and will provide for visitors means of information and almost every facility for convenience and comfort except lodging. The Bureau will be managed by W.-M. Kasson, who had charge of similar service at the Philadelphia Centennial, though on a much smaller scale than is now planned. A separate organization having arrangements with the hotels and lodging houses of the city, will extend its service to all visitors who wish it. It is the determination to protect visitors from imposition of every description, and to see that prices are kept down to a reasonable basis.

A plan has been elaborated for making the Tyrolese section perhaps the most entertaining part of Austria's exhibit at the World's Fair. The purpose in arranging this section will be to give as graphic a representation of Tyrolese life and scenery as possible for a background to the exhibits of Tyrolese manufacturers. The section will be circular, and the walls will be covered with a panoramic picture of the Rhaetian and Tyrolese Alpes, including the Gross-Glockner and Orter peaks and the largest ice fields. In two cottages at the foot of the mountains, two parties of Tyrolese will show their skill in spinning and weaving silk and in carving. Three women will make lace before the cottage doors. A Company of young men and women singers will give several concerts daily. The picturesque part of the exhibit will be under the auspices of the hotel and tavern keepers of the Tyrol, and the representations of Tyrolese scenery will be

made for the purpose of inducing American tourists in Europe to pass more of their time in the Rhaetian and Tyrolean Alps.

One of the marvels of the recent electrical exposition at Frankfurt was a six foot electric search light of 20,000 candle power. Schuckertt, the Nuremberg electrician, astonished Europe in its construction. Schuckertt is now at work on a larger light for the World's Fair.

The numerous congresses to be held in connection with the Exposition are creating wide-spread interest, and undoubtedly will be a very important feature of the Fair. According to the general schedule now prepared the various congresses under the several departments will be held as follows:

May.—Music and the drama, public press, medicine.

June.—Temperance, moral and social reform, commerce and finance.

July.—Literature, science and philosophy, education.

August.—Engineering, art, government.

September.—Parliament of religious, denominational congresses, sunday rest.

October.—Labor, agriculture, real estate, merchants, etc.

These great departments are in charge of general committees, which with the advice and suggestions of persons and societies interested, arrange the programme and select the speakers, with the approval of the president of the Auxiliary.

“The eighth and greatest wonder of the world”, is what the World's Fair buildings and grounds, even in their present incomplete condition, are pronounced by Major Woods, Executive Commissioner of the Connecticut World's Fair Board.

In lighting the World's Fair, 92,612 incandescent lamps, of 16-candle power each will be used, according to present estimates. The contract for furnishing and maintaining these lights has just been let to George Westinghouse, Jr., for \$ 339,000.

Commissioner Dredge writes that the collections of rare old lace and Venetian glass which will be exhibited from Venice will constitute a most valuable section of the exhibition to be made of ancient Italian art work.

The Exposition is deriving quite a revenue from the visitors whose curiosity prompts them to see the grounds and the wonderful buildings now approaching completion. An admission of twenty-five cents is charged, and on single days the number of visitors has exceeded 14,000. With warmer and more pleasant weather, it is believed, the visitors will be much more numerous. Without exception all are enthusiastic in their admiration and wonder at the magnificent spectacle.

A.-B. de Guerville, who was commisioned to go around the world and give illustrated lectures on the Exposition, has written from Japan that so great is the interest in the Fair that he rarely fails to talk to full houses. He was cordially received by the Emperor and Empress of Japan, and delivered his lecture before the court. The Emperor expressed enthusiasm and delight over the magnificence of the Exposition buildings, which were shown by fine screen views during the lecture.

An exhibit from Syrian women, consisting chiefly of beautiful and costly embroideries, has been received by the Board of Lady Managers at Chicago.

The women of Belgium will be represented at the Exposition by an exhibit. A women's committee, with the queen as patroness, has been selected to have charge of the matter.

In response to the thousands of invitations to distinguished persons to attend the Exposition dedicatory ceremonies next October, the acceptance thus far has been almost unanimous. Among those who will be present are the President and his entire Cabinet, the members of the Supreme Court, nearly every foreign minister at Washington, the governors of the different States, members of Congress and special representatives of many foreign nations.

The magnitude of the French exhibit at the Exposition can be surmised from the fact that in the calculations as to its transportation to Chicago it is estimated that it will aggregate fully 3,000 tons. The exhibit, it is unnecessary to explain, will consist chiefly of works of art and manufactures of the finer and lighter description, and will include very little in the way of heavy articles, such as machinery.

A committee of insurance men has inspected the system and methods of fire protection established on the Exposition grounds, and has reported that they are in all respects adequate and satisfactory. It found thousands of fire buckets in the buildings, Babcock extinguishers on every hand, chemical engines at every necessary point, hose lines reaching to the top of the buildings, fire alarm boxes numerous and easily accessible, an efficient fire alarm service, a system of water works with a capacity of millions of gallons a day, watchmen on duty day and night, and steam engine houses and engines and a well-drilled force of firemen.

The California Bee Keepers' Association is preparing a notable exhibit for the Fair. Besides honey and bees, the exhibit will include pressed flowers of all the different honey flora, specimens of the birds and insects which are the enemies of bees, models and photographs of apiaries, and novelties in the shape of production distinctive to California, especially in the line of beewax and foundation.

Arizona is planning to reproduce for its building at the Exposition the famous CASA GRANDE, which stands in the southern part of the territory. The Casa Grande, which is probably the most remarkable and interesting prehistoric ruin in North America, was first visited by Europeans in 1538, by Cabeza de Vaca and his followers, of the ill-fated Ponce de Leon expedition. Four years later Coronado, during his expedition to the Southwest, made it his headquarters. Then, as now, not even a tradition as to the race that built it remained among the surrounding tribes. The building was once the main gateway to an immense walled city, the ruins of which still cover the plains, and to such an extent that in the accurate estimation of scientists the city's population must have exceeded a hundred thousand. The remains of vast irrigating ditches and cemented reservoirs are found in the vicinity of the ruined city. By cleaning one of the irrigating ditches recently 150,000 acres of land were reclaimed. This ancient irrigation system will be shown by relief maps. The ruins of Casa Grande are between five and six stories high and fifty feet square. They are composed of sun-dried brick, with heavy buttressed walls, and, like all the other ancient ruins in that country, bear evidences of having been destroyed by fire, for the charred remains of rafters still cling to the walls. All about for miles and miles are strewn broken pottery, arrow heads and stone axes, which tell scientists that one day thousands of years ago that city blazed with fire and was deserted by a panic-stricken people. Casa Grande is the most famous feature of all those old sun-baked ruins, and its unknown origin, the sudden and unaccountable flight and dissolution of the city it guarded, and the deep mystery which has clung to it for ages, make it one of the most interesting subjects of scientific investigation. It will be, perhaps, on its reproduction at the Fair, the most interesting building in which any of the States or territories will make headquarters.

The Ecuador commissioners have had constructed a facsimile of the famous palace of the Inca Perca, the ruins of which stand near the city of Quito, and will exhibit it at the Fair.

The French government has consented that plaster casts be made for the World's Fair of the numerous art treasures in the Trocadero, Paris. The Exposition authorities will bear the expense, which will be something above \$ 25,000. The collection will be a very fine one and will occupy a conspicuous place in the Fine Arts building. After the Fair, the collection will be placed in the projected Chicago Museum, where, it is believed, it will prove of great benefit to American artists and of much interest to visitors.

A. B.

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doz. of pairs			
„ 14 3s 0d	1s 6d	13 10s 0d	13s 0d
„ 15 3s 6d	2s 6d	14 11s 0d	13s 0d
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A complete list up to date of the Humming-birds found in Columbia, with descriptions of several supposed new species.

By A. BOUCARD.

Order TROCHILI, Boucard. Cat. Av. 1876.

1. **TROCHILUS COLIBRIS**, L. Syst. Nat. 1766, t. I, p. 191.
Volcan de Chiriqui, Veragua, Columbia.
2. **SELASPHORUS SCINTILLA**, Gould Mon. Troch., vol. III, p. 438.
Veragua, Columbia.
3. **SELASPHORUS ARDEN**, Salv. P. Z. S., 1870, p. 209.
Veragua, Columbia.
4. **SELASPHORUS TORRIDUS**, Salv. P. Z. S., 1870, p. 208.
Volcan de Chiriqui, Columbia.
5. **ACESTRURA MULSANTI**, Bourc. Ann. Sc. Phys., Lyon, 1842,
t. V, p. 342. — *Acestrura decorata*, Gould. P. Z. S.,
1860, p. 309.
Bogota, Columbia.
6. **ACESTRURA HELIODORI**, Bourc. Rev. Zool., 1840, p. 275.
Bogota, Columbia.
7. **MYRTIS FANNY**, Less. Ann. Sc. Nat., 1838, t. IX, p. 170.
Buenaventura, Colombia.
8. **DORYCHA BRYANTHÆ**, Lawr. Ann. N.-Y. Lyc. Nat. Hist. 1887,
vol. VIII, p. 483.
Veragua, Columbia.
9. **CALLIPLOX MITCHELLI**, Bourc. P. Z. S., 1847, p. 47.
Bogota, Columbia.
10. **LOPHORNIS ADORABILIS**, Salv. P. Z. S., 1870, p. 207.
Chiriqui, Columbia.
11. **LOPHORNIS VERREUXXI**, Bourc., Rev. Zool. 1853, p. 193.
Bogota Colombia.
12. **LOPHORNIS STICTOLOPHUS**, Salv and Elliot, Ibis, 1873,
p. 280.
Bogota, Columbia.
13. **LOPHORNIS DELATTRII**, Less. Rev. Zool., 1839, p. 19.
Veragua, Panama and Bogota, Columbia.

14. GOULDIA POPELAIRII, Du Bus. Esq. Ornith., 1845, pl. VI.
Bogota, Columbia.
15. GOULDIA CONVERSI, Bourc. and Muls. Ann. Sc. Agr., Lyon,
1846, p. 313.
Veragua and Bogota, Columbia.
16. KLAIS GUIMETI, Reich. Aufz., der Colib., 1853, p. 13.
Bogota, Columbia.
17. KLAIS MERRITI, Lawr. Ann., N.-Y. Lyc. Nat. Hist., 1860,
vol. III, p. 110.
Veragua and Panama, Columbia.
- 18*. ANTHOCEPHALA FLORICEPS, Cab. Mus. Hein, 1860, t. III, p. 72.
Santa-Marta, Columbia.
19. MICROCHERA ALBOCORONATA, Lawr. Ann. N.-Y. Lyc. Nat.
Hist., 1855, vol. II, p. 137.
Veragua, Columbia.
20. CHRYSOLAMPIS MOSCHITUS, L. Syst. Nat. 1776, vol. I, p. 192.
Bogota, Columbia.
- 21*. METALLURA WILLIAMII, Bourc. and Del. Rev. Zool., 1846,
p. 308.
Popayan, Columbia.
22. METALLURA SMARAGDINICOLLIS, d'Orb. and Lafr. Syn. Av.,
t. II, p. 31.
North Columbia.
23. METALLURA TYRIANTHINA, Lodd. P. Z. S., 1832, p. 6.
Bogota Columbia.
24. AVOCETTINUS EURYPTERUS, Lodd. P. Z. S., 1832, p. 7.
Popayan and Bogota, Columbia.
25. ADELOMYIA MELANOGENYS, Fras. P. Z. S., 1840, p. 18. —
Adelomyia cervina, Gould. Ann. and Mag. Nat. Hist.,
1872, t. X, p. 453.
Bogota, Columbia.
26. CHALCOSTIGMA HETEROPOGON, Boiss. Rev. Zool., 1829,
p 355.
Bogota, Columbia.
27. EUPOGONUS HERRANI, Del. and Bourc. Rev. Zool., 1846, p. 309.
Pasto, Columbia.
28. OXYPOGON GUERINI, Boiss. Rev. Zool., 1840, p. 7. — *Oxy-*
pogon stuebeli, Meyer. Mad. Zeitsch. ges. Ornith. 1884,
vol. I, p. 204.
Bogota, Columbia.
29. OXYPOGON CYANOLAEMUS, Salv. and Godm. Ibis, 1880, p. 172.
Sierra-Nevada of Santa-Marta, Columbia.

30. *OXYPOGON LINDENI*, Boiss. Rev. Zool., 1840, p. 253.
Columbia?

31. *RAMPHOMICRON MICRORHYNCHUM*, Boiss. Rev. Zool. 1839,
p. 354.
Bogota, Columbia.

32*. *RAMPHOMICRON DORSALE*, Salv. and Godm. Ibis, 1880,
p. 172.
Sierra-Nevada of Santa-Marta, Columbia.

33. *LESBIA EUCHARIS*, Bourc. Rev. Zool. ,1848, p. 274.
Bogota, Columbia.

34. *LESBIA GOULDI*, Lodd. P. Z. S., 1832, p. 7.
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35. *LESBIA VICTORIÆ*, Bourc. and Muls. Ann. Soc. Agr., Lyon,
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36*. *ZODALIA GLYCERIA*, Bon. Rev. and Mag. Zool., 1854, p. 252.
Popayan, Columbia.

37. *CYANOLESBIA MOCOA*, Del. and Bourc. Rev. Zool., 1846,
p. 311.
Antioquia and Popayan, Columbia.

38. *CYANOLESBIA GORGO*, Reich. Aufz der Col., p. 8-24.
Bogota, Columbia.

39. *CYANOLESBIA CŒLESTIS*, Gould. Int. Troch., p. 102.
Popayan, Columbia.

40*. *NEOLESBIA NERKHORNI*, Berl. Beisch. eines. Newen. Colib.
Zeift. für Ornith, 1887, p. 178.
Bogota, Columbia.

41. *THALURIANA FANNIÆ*, Bourc. and Del. Rev. Zool.,1846,p.310.
Quindiu and Popayan, Columbia.

42. *THALURANIA COLUMBICA*, Bourc. and Muls. Rev. Zool.,1843,p.2.
Bogota, Columbia.

42 bis. *THALURANIA NIGROFASCIATA*, Gould. P. Z. S., 1846, p. 89.
Andes and Bogota, Columbia.

43. *HELIODOXA JACULA*, Gould. P. Z. S., 1849, p. 96.
Bogota, Columbia.

44. *HELIODOXA BERLEPSCHI*, n. sp.
Veragua, Columbia.

Male. — Crown of the head, throat and breast glittering metallic green with golden reflections. Upperside dark green passing to shining green on rump, and golden-green on upper-tail-coverts. Median rectrices steel-blue, margined with greenish

bronze, lateral steel-blue. Abdomen, flanks, and undertail-coverts golden-green. Wings purplish-brown. Bill black.

Total length, 5 in. Wings, 3. Tail, $2 \frac{1}{2}$. Culmen, $\frac{6}{8}$.

Female. — Upperside shining green with golden tinge on head and neck. Median rectrices bronze-green passing to bluish-black at tips, lateral bluish-black tipped white. Underside white, each feather tipped with golden-green. Wings dark brown. Bill black.

Total length, $4 \frac{6}{8}$ in. Wings, $2 \frac{6}{8}$. Tail, 2. Culmen, $\frac{7}{8}$.

Young male. — Upper and underside golden-green with sides of throat rufous.

This species is closely allied to *H. Jamesoni*, but it is much brighter on flanks, the crown is totally metallic, the bill is shorter, and the female has not the rufous abdomen of *H. Jamesoni*.

I collected my specimens at Naranjo, and on the Volcan of Irazu, Costa-Rica; but I have also some specimens from Veragua, Columbia. I have the great pleasure to dedicate this fine new species to count VON BERLEPSCH, the celebrated German Ornithologist.

45. *HELIODOXA LEADBEATERI*, Bourc. Rev. Zool., 1843, p. 102.

Bogota, Columbia.

46. *HELIOTRYPHA EXORTIS*, Fras., P. Z. S., 1840, p. 14.

Bogota, Columbia.

47. *HELIOTRYPHA BARRALI*, Muls. and Verr. Ann. Soc. Lin., Lyon, 1868, vol. XVII, p. 106.

Antioquia and Bogota, Columbia.

48. *HELIOTRYPHA SPECIOSA*, Salv. Ann. and Mag. Nat. Hist., 1891, p. 376.

Bogota ? Columbia.

49. *HELIOTRYPHA SIMONI*, n. sp.

Bogota, Columbia.

Male. — Spot on forehead luminous golden-green. Upperside shining green with bronze reflections. Median rectrices bronze-green, lateral and outermost ones steel-blue. Throat luminous pale golden-green, very brilliant, sides of throat very dark green appearing almost black. Breast, abdomen and flanks shining green. Undertail-coverts gray with green tips. Wings bluish-purple. Bill black.

Total length, $4 \frac{2}{8}$ in. Wings, $2 \frac{6}{8}$ Tail, 2. Culmen, $\frac{5}{8}$.

It is closely allied to *H. speciosa*; but the colour of throat is quite distinct. I compared my specimens with that type, now in the British Museum.

I have the pleasure of naming it after my friend, Mr E. Simon, the well known Entomologist, and an enthusiastic collector of Humming-birds.

50. *HELIANGELUS CLARISS.E*, Long. Rev. Zool., 1841, p. 306.
Bogota, Columbia.

51. *HELIANGELUS MAVORS*, Gould. P. Z. S., 1848, p. 42.
Postachuela, Columbia.

52. *HELIANGELUS ROTSCILDI*, n. sp.
Bogota, Columbia.

Male. — Upperside, including tail, lustrous purple, with a brilliant spot on forehead. Outermost rectrices slightly tipped with grayish-buff. Throat luminous coppery-gold with reddish reflexions, sides of throat silky-black. Upper part of breast grayish-buff. Lower part of breast and abdomen dark gray washed with bronzy-green. Sides of breast and flanks purple. Under-tail-coverts buffy-white with a greenish line in centre of each feather. A white spot behind the eye. Underside of tail shining bluish-purple. Wings purplish-brown. Bill and feet black.

Total length, $3\frac{6}{8}$ in. Wings, $2\frac{1}{2}$. Tail, $1\frac{6}{8}$. Culmen, $\frac{9}{46}$.

Female. — Unknown.

This magnificent species is quite distinct from all the others by its general purple colour, and the peculiar colour of its throat.

I have great pleasure to dedicate it to the Hon. Lionel Walter de Rothschild, who, during the last few years, regardless of time and expenses, has formed at TRING a very fine Zoological Museum, which he intends to open to the public in a few days. I hope that many other wealthy persons will follow such a good and philanthropic example.

53. *AGLEACTIS CUPRIPENNIS*, Bourc. and. Muls. Ann. Soc. Agr., Lyon, 1848, t. VI, p. 46.
Bogota, Columbia.

54. *OREOPYRA LEUCASPIS*, Gould. Mon. Troch., vol. IV, p. 264.
Veragua, Columbia.

55. *OREOPYRA CALOLÆMA*, Salv. P. Z. S., 1864, p. 584.
Veragua, Columbia.

56. *PANTERPE INSIGNIS*, Cab and Hein. Mus. Hein., 1860.
t. III, p. 43.
Volcan de Chiriqui, Columbia.

57. *CLYTOLÆMA RUBINOIDES*, Bourc. and Muls. Ann. Soc. Agr., Lyon, 1846, p. 322.
Bogota, Columbia.

58*. *CLYTOLÆMA CERVINIGULARIS*, Salv. Ann. and Mag. Nat. Hist., 1891, p. 377.
Columbia ?

59. CLYTOLÆMA FLAVESCENS, Lodd. P.Z.S., 1832, p. 7.
Bogota, Columbia.

60. JOLÆMA LUMINOSA, Elliot. Ibis., 1878, p. 188.
Bogota ? Columbia.

61. ERIOCNEMIS VESTITA, Long. Rev. Zool., 1838, p. 114.
Bogota, Columbia.

62*. ERIOCNEMIS VENTRALIS, Salv. Ann. and Mag. Nat. Hist., 1891, p. 378.
Bogota, Columbia.

63. ERIOCNEMIS CUPREIVENTRIS, Fras. P.Z.S., 1848, p. 15.
Bogota, Columbia.

64. ERIOCNEMIS ALBOGULARIS, n. sp.
Bogota, Columbia.

Male. — Upperside shining green, most brilliant on upper-tail-coverts. Tail steel-blue. Throat pure snow white. Breast, upper part of abdomen, and flanks shining green. Lower part of abdomen metallic-golden. Tarsal tufts pure white. Undertail-coverts shining blue. Wings purplish-brown. Bill and feet black.

Total length, $3 \frac{7}{8}$ in. Wings, $2 \frac{3}{8}$. Tail, $1 \frac{7}{8}$. Culmen, $\frac{6}{8}$.

Female. — Unknown.

This new species is allied to *E. cupreiventris*, but easily distinguishable by the colour of its throat.

Unique in my Collection.

65*. ERIOCNEMIS SIMPLEX, Gould. P.Z.S., 1849, p. 96.
Bogota Columbia.

66. ERIOCNEMIS DYSELIUS, Elliot. Ibis, 1873, p. 294.
Bogota, Columbia.

67*. ERIOCNEMIS INCULTUS, Elliot. Auk., 1889, p. 209.
Bogota, Columbia.

68*. ERIOCNEMIS AUREA, Meyer. Auk., 1890, vol. VII, p. 315.
Bogota, Columbia.

69. ERIOCNEMIS CHRYSORAMA, Elliot. Ann. and Mag. Nat. Hist., 1874, p. 375.
Bogota, Columbia.

70. ERIOCNEMIS MOSQUERÆ, Bourc. and Del. Rev. Zool., 1846,
p. 306.
Bogota, Pasto, Columbia.

71*. ERIOCNEMIS ISAACSONI, Parz. Rev. Zool., 1845, p. 95.
COLUMBIA.

72. ERIOCNEMIS ALINÆ, Bourc. Ann. Soc. Agr. Lyon., 1842,
p. 343.
Bogota, Columbia.

73. EREBENNA DERBIANA, Delat. and Bourc. Rev. Zool., 1846, p. 306.
Popayan, Columbia,

74. THREPTRIA AURELLÆ, Bourc. and Muls. Ann. Soc. Agr., Lyon, 1846, p. 315.
Bogota, Columbia.

75. STEGANURA UNDERWOODI, Less. Troch., 1831, p. 105.
Bogota, Columbia.

76. CHLOROSTILBON CHRYSOGASTER, Bourc. Rev. Zool., 1843, p. 101.
Chlorostilbon hæberlini, Cab. and Heine. Mus. Hein., t. III, p. 48.
Santa-Marta, Columbia.

77. CHLOROSTILBON INEXPECTATA, Berl. Ornith. Centralbl., 1879, p. 63.
Bogota, Columbia.

78. CHLOROSTILBON SPECIOSA, n. sp.
Bogota, Columbia.

Male. — Upperside dark olive-green. Tail steel-blue. Wings purplish-brown. Underside including undertail-coverts shining olive-green. Maxilla black. Mandible flesh colour with black tip.
Total length, $3\frac{1}{8}$ in. Wings, 2. Tail, $1\frac{1}{8}$. Culmen, $\frac{9}{16}$.

Female. — Unknown.
The coloration of this species is unique among the *Chlorostilbon*.

79. CHLOROSTILBON PUMILUS, Gould. Ann. and Mag. N.-H., 1872, t. IX, p. 495.
Chlorostilbon comptus, Berlepsch, Ibis, 1887, p. 296.
Medellin and Popayan, Columbia.

80. CHLOROSTILBON ANGUSTIPENNIS, Fraz. P.Z.S., 1840, p. 48.
Bogota, Columbia.

81. PRASITIS ATALA, Less. Hist. Nat. Troch., 1831, p. 418.
Valencia, Columbia.

82. PRASITIS MELANORHYNCHUS, Gould. P. Z. S., 1860, p. 308.
Antioquia, Columbia.

83. PRASITIS ASSIMILIS, Lawr. Ann. Lyc. N.-Y., t. VII, p. 292.
Veragua and Colon, Columbia.

84. PANYCHLORA ALICIE, Bourc. and Muls. Rev. Zool., 1848, p. 274.
Bogota, Columbia.

85*. **PANYCHLORA MICANS**, Salv. Ann. and Mag. Nat. Hist., 1891,
p. 375.
Colombia?

86. **PANYCHLORA POORTMANI**, Bourc. Rev. Zool., 1843, p. 2.
Bogota, Columbia.

87*. **PANYCHLORA RUSSATA**, Salv. and Godm. Ibis, 1881, p. 597.
Santa-Marta, Columbia.

88. **PANYCHLORA EUCHLORIS**, Reich. Aufz. der Colib., 1853,
p. 7-23. — *Panychloa poortmani major*, Berl. J. für.
Ornith., 1884, p. 313.
Bogota, Columbia.

89. **PANYCHLORA STENURA**, Cab. and Hein. Mus. Hein, t. III,
p. 50.
Ocana, Columbia.

90. **JULIAMYIA TYPICA**, Bon. Rev. and Mag. Zool., 1854, p. 255.
Bogota, Columbia.

91*. **JULIAMYIA PANAMENSIS**, Berl. Journ. für Ornith., 1884,
p. 343.
Panama, Columbia.

92. **CYANOPHAIA CŒRULEIGULARIS**, Gould. P. Z. S., 1860, p. 163.
Veragua, Panama, Columbia.

93. **CYANOPHAIA GOUDOTI**, Bourc. Rev. Zool., 1843, p. 100.
Bogota, Colombia.

94*. **CYANOPHAIA LUMINOSA**, Lawr. Ann. Lyc. N.-Y., t. VII,
p. 458.
Baranquilla and Cartagena, Columbia.

95. **DAMOPHILA AMABILIS**, Gould. P. Z. S., 1851, p. 115. —
Polyerata decora, Salv. Ann. and Mag. Nat. Hist., 1891,
p. 394.
Veragua and Bogota, Columbia.

96. **HYLOCHARIS GUIANENSIS**, Boucard. Hum.-Bird., 1891, vol. I,
p. 52.
Bogota, Columbia.
I have just received one female specimen from Columbia,
which I refer to this species.

97. **EUCEPHALA GRAYI**, Delatand Bourc. Rev. Zool., 1846, p. 307.
Popayan, Columbia.

98*. **TIMOLIA LERCHI**, Muls. Cat. Ois. Mou., 1875, p. 23.
Columbia.

99. **AMAZILIA FUSCICAUDATA**, Fras. P. Z. S., 1840, p. 17. —
Amazilia riefferi, Bourc. Ann. Sc. Phys., Lyon, t. IV,
p. 45.
Bogota, Columbia.

100*. *AMAZILIA CASTANEVENTRIS*, Gould. P. Z. S., 1856, p. 150.
Bogota, Columbia.

101*. *AMAZILIA LAWRENCEI*, Elliot. Auk., 1889, p. 209-210.
Columbia?

102. *AMAZILIA VIRIDIGASTER*, Bourc. Rev. Zool., 1843, p. 105. —
Amazilia viridiventris, Reich. Troch. Enum., p. 4,
pl. 699.
Bogota, Columbia.

103. *AMAZILIA IODURA*, Sauc. M. S. Reich. Aufz. der Colib., 1853,
p. 8.
Bogota, Columbia.

104*. *AMAZILIA LUCIDA*, Elliot. Ann. and Mag. Nat. Hist., 1877,
p. 404.
Bogota, Columbia.

105. *AMAZILIA EDWARDI*, Delat. and Bourc. Rev. Zool., 1846, p. 305.
Veragua, Panama, Columbia.

106. *AMAZILIA NIVEVENTRIS*, Gould. P. Z. S., 1850, p. 164.
Veragua, Panama, Columbia.

107. *EUPHERUSA EGREGIA*, Sclat. and Salv. P. Z. S., 1868, p. 389.
Veragua, Columbia.

108. *CALLIPHARUS NIGRIVENTRIS*, Lawr. Proc. Acad. Nat. Sc.
Phil., 1867, p. 232.
Veragua, Columbia.

109. *ELVIRA CHIONURA*, Gould. P. Z. S., 1850, p. 162.
Veragua, Columbia.

110. *SAUCEROTIA SOPHIAE*, Bourc. and Muls. Ann. Soc. Agr.
Lyon, 1846, t. IX, p. 318. — *Saucerottia warszewiczi*, Cab. and Hein, Mus. Hein. t. III, p. 38.
Santa-Marta, Valencia and Baranquilla, Columbia.
This species is the true *S. sophiae*. That from Costa-Rica must take the name of *S. hoffmanni*, Cab. and Hein.

111. *SAUCEROTTIA SAUCEROTTEI*, Del. and Bourc. Rev. Zool.,
1843, p. 100.
Caly, Columbia.

112. *SAUCEROTTIA CYANIFRONS*, Bourc. Rev. Zool., 1843, p. 100.
Hagué, Columbia.

113. *SAUCEROTTIA NUNEZI*, n. sp.
Habitat. — Bogota, Columbia.
Male. — Upperside black with purplish reflections. Upper-tail-coverts purplish, each feather margined with grayish-green. Tail dark steel-blue. Wings bluish-purple. Throat shining dark purple, each feather with a white band above the

purple giving a scaly appearance to that part. Abdomen and flanks purplish margined with gray. A patch on each side of flanks; margined with gray: Vent and tarsal tufts, pure white. Undertail coverts dark brownish-green margined with white. Maxilla black. Mandible flesh colour with black tip.

Total length, $3\frac{2}{8}$ in. Wings, 2. Tail, $1\frac{3}{8}$. Culmen, $\frac{6}{8}$.

Female. — Unknown.

I have two specimens exactly alike. It is quite easy to distinguish it from all the other species, in consequence of its particular colour. I dedicate it to Don RAPHAEL NUNEZ, the actual President of Columbia.

114. URANOMITRA FRANCÆ, Bourc. and Muls. Ann. Soc. Agr., Lyon, 1846, t. IX, p. 234.

Bogota, Columbia.

115. URANOMITRA COLUMBIANA, n. sp.

Bogota, Columbia.

Male. — Head and sides of neck metallic green. Upperside golden-green. Median rectrices-bronze, lateral purplish-bronze with a wide subterminal brownish-black bar. Throat, centre of abdomen, anal region, and undertail-coverts white. Flanks golden-green. Wings purple-brown. Maxilla black. Mandible flesh colour with black tip.

Total length, $3\frac{6}{8}$ in. Wings, $2\frac{1}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{7}{8}$.

Female. — Upperside bronzy-green passing to reddish-golden on rump and uppertail-coverts. Tail bronze, lateral bronze with a subterminal brownish black bar and gray tips. Throat, centre of abdomen, lower part of vent, and undertail-coverts white. Sides of neck and breast shining-green. Flanks golden-green. Bill and size like the male.

This species is closely allied to *U. niveipectus* from which it can be easily distinguished by the color of mandible.

116. URANOMITRA MILLERI, Bourc. P. Z. S., 1847, p. 43.

Bogota, Columbia.

117. AGYRTRIA TERPNA, Hein. Journ. für. Ornith., 1863, p. 184.

Bogota, Columbia.

118*. AGYRTRIA APICALIS, Gould. Int. Troch., 1861, p. 154.

Columbia.

119. AGYRTRIA CŒRULEICEPS, Gould. P. Z. S., 1860, p. 307.

Columbia?

Having studied with much care, the unique type of this species, in the British Museum. I have come to the conclusion that it is only a young male of *Chrysura n. josephinæ*.

120. *CHRYSURONIA ÆNONE LONGIROSTRIS*, Berlepsch. *Krit Web.*, 1888, p. 20.
Bogota, Columbia.

121. *CHRYSURONIA ELICLÆ*, Bourc. and Muls. *Ann. Soc. Agr.*, Lyon, 1846, t. IX, p. 314.
Veragua, Columbia.

122. *POLYTMUS THAUMANTIAS*, L. *Syst. Nat.*, 1766, vol. I, p. 489.
Bogota, Columbia.

123. *DOLEROMYA FALLAX*, Bourc. *Ann. Sc. Phys.*, Lyon, 1843, t. VI, p. 44.
Santa-Marta, Columbia.

124. *PHÆTHORNIS PANAMENSIS*, n. sp.
Panama and Veragua, Columbia.

Male. — Head brownish-black. Upperside golden-green passing to golden-rufous on rump and uppertail-coverts, each feather margined with brownish-black, the rufous of undertail-coverts very apparent. Tail bronze at base, then black with deep buff tips on lateral and outermost rectrices, tips of median white. Wings purplish brown. Gular stripe deep buff margined with brownish-black and passing to grayish-white on breast. Stripe over the eye and line from end of maxilla passing under the eyes and ear-coverts deep buff. Ear coverts black. Sides of throat, breast and upper part of abdomen and flanks, bronzy-gray, passing to whitish in the centre of abdomen. Lower part of abdomen flanks and undertail-coverts buff. Maxilla black. Mandible flesh colour with black tip.

Total length, $5\frac{1}{2}$ in. Wings, $2\frac{1}{2}$. Tail, 3. Culmen, $1\frac{1}{2}$.

I discovered this species at Panama, January 1877. I have also some specimens collected at Agua Dulce, Veragua.

125. *PHÆTHORNIS LONGIROSTRIS*, Less and Del. *Echo du Monde Savant*, 1843, p. 1070.
Panama, Columbia.

126. *PHÆTHORNIS CONSOBRINUS*, Bourc. *M. S. Reich. Aufz. der. Col.*, 1853, p. 14.
Bogota, Columbia.

127. *PHÆTHORNIS SYRMATOPHORUS*, Gould. *Contr. Ornith.*, 1851, p. 139. — *Phæthornis columbianus*, Boucard, *Hum. Bird*, 1891, vol. I, p. 17.
Bogota, Columbia.

128. *PHÆTHORNIS ANTHOPHILUS*. Bourc. *Rev. Zool.*, 1843, p. 71.
Bogota, Columbia.

129. PHÆTHORNIS HISPIDUS, Gould. P.Z.S., 1846, p. 90.
Bogota, Columbia.

130. TOXATEUCHES EMILIAE, Bourc. and Muls. Ann. Soc. Agr.,
Lyon, 1846, p. 47.
Veragua, Bogota, Columbia.

131. ANISOTERUS PRETRII, Less. and Del. Rev. Zool., 1839,
p. 20.
Bogota, Columbia.

132. ANISOTERUS AUGUSTI, Bourc. Ann. Sc. Phys., Lyon, 1847,
vol. I, p. 623.
Bogota, Columbia.

133. EREMITA GRISEIGULARIS, Gould. P.Z.S., 1851, p. 115.
Bogota, Columbia.

134. EREMITA STRIGULARIS, Gould. Mon. Troch., vol. I,
p. 37.
Bogota, Columbia.

135. EREMITA ADOLPHI, Gould. Mon. Troch., vol. I, p. 35.
Veragua, and Panama, Columbia.

136. EUTOXERES AQUILA, Bourc. P. Z. S., 1847, p. 42. — *Eutoxeres salvini*, Gould. Ann. and. Nat. Hist., 1868, t. I,
p. 456.
Veragua and Bogota, Columbia.

137. ANDRODON AÉQUATORIALIS, Gould. Ann. Mag. Nat. Hist.,
1863, p. 247.
Antioquia, Columbia.

138. THRENETES CERVINICAUDA, Gould. P.Z.S., 1854, p. 109.
Bogota, Columbia.

139. THRENETES RUCKERI, Bourc. P.Z.S., 1847, p. 146.
Veragua, Columbia.

140. GLAUCIS AENEA, Lawr. Proc. Acad. Nat. Sc. Phil., 1867,
p. 232.
Bogota, Columbia.

141. CHALYBURA BUFFONI, Less. Troch., 1831, p. 34.
Bogota, Columbia.

142. CHALYBURA AENEICAUDA, Lawr. Proceed. Acad. Nat. Sc.
Phil., 1865, p. 38.
Valencia, Columbia.

143. CHALYBURA CÆRULEIVENTRIS, Reich. Aufz. der Colib.,
1853, p. 10.
Bogota, Columbia.

144. CHALYBURA MELANORHOA, Salv. P.Z.S., 1864, p. 585
Veragua, Columbia.

145. CHALYBURA ISAURÆ, Gould. P.Z.S., 1861, p. 199.
Veragua, Columbia.

145*. CHALYBURA UROCHRYSEA, Gould. P.Z.S., 1861, p. 198.
Panama, Columbia.

147. LAMPORNIS VIOLICAUDA, Buff. Hist. Nat. Ois. Mou.,
t. 1V, p. 55. — *Lampornis nigricollis*, Vieill. Nouv.
Dict. Hist. Nat., 1817, vol., VII, p. 349.
Bogota, Columbia.

148. LAMPORNIS HENDERSONI, Cory Auk., 1887, t. IV. p. 177.
Old Providence Isl, Columbia.

149. LAMPORNIS VERAGUENSIS, Gould. Mon. Troch., vol. II,
p. 76.
Veragua and Panama, Columbia.

150. FLORISUGA MELLIVORA, L. Syst. Nat., 1766, vol. I, p. 193.
Bogota. Columbia.

151. MELANOTROCHILUS FUSCUS, Pr. Max. Reis. Braz., Vol. I,
p. 366.
Bogota. Columbia.

152. LA FRESNAYA FLAVICAUDATA, Fraz. P. Z. S., 1840, p. 18.
Bogota, Columbia.

153. LA FRESNAYA CINEREO-RUFA, Boucard. Hum.-Bird., 1891,
vol. I, p. 23.
Bogota, Columbia.

154. LA FRESNAYA GAYI, Bourc. and Muls. Ann. Sci Phys. et
Nat. Lyon., 1846, t. IX, p. 325.
Antioquia, Columbia.

155. PETASOPHORA CYANOTIS, Bourc. Rev. Zool., 1843, p. 101.
Bogota, Columbia.

156. PETASOPHORA CABANISI, Lawr. Ann. Lyc. Nat. Hist. N.-Y.,
t. IX, p. 126.
Veragua, Columbia.

157. PETASOPHORA ANAIS, Less. Troch., 1831, p. 146.
Bogota, Columbia.

158. PETASOPHORA CORRUSCANS, Gould. P. Z. S., 1846, p. 44.
Bogota, Columbia.

159. PETASOPHORA RUBRIGULARIS, Elliot. Ibis., 1876, p. 405.
Bogota, Columbia.

168. PETASOPHORA DELPHINÆ, Less. Rev. Zool., 1839, p. 44.
Veragua and Bogota, Columbia.

161. HELIOTHRIX AURITUS, Gmel. Syst. Nat., 1788, vol. I,
p. 493.
Bogota, Columbia.

162. HELIOTHRIX BARROTI, Bourc. Rev. Zool., 1843, p. 72.
Bogota, Columbia.

163. HELIOTHRIX VIOLIFRONS, Gould. Int. Troch., 1861, p. 122.
Veragua, Columbia.

164. SCHISTES GEFFROYI, Bourc. and Muls. Ann. Soc. Agr.,
Lyon, 1843, t. IV, p. 37.
Bogota, Columbia.

165. SÆPIOPTERUS LAZULUS, Vieill. Tabl. Encycl., part II,
p. 557.
Bogota, Columbia.

166. SÆPIOPTERUS PHAINOPEPLUS, Salv. and Godm. Ibis., 1879,
p. 202.
Sierra-Neveda of Santa-Marta, Columbia.

167. SÆPIOPTERUS HEMILEUCURUS, Licht. Preiz. Verz. Mex.
Thier., 1853, n° 33.
Veragua, Columbia.

168. CAMPYLOPTERUS CUVIERI, Del. and Bourc. Rev. Zool., 1845,
p. 315.
Veragua and Panama, Columbia.

169. HEMISTEPHANIA LUDOVICIAE, Bourc. and Muls. Ann. Soc.
Agr., Lyon, 1847, p. 136.
Bogota, Columbia.

170. HEMISTEPHANIA VERAGUENSIS, Salv. P. Z. S., 1867, p. 154.
Veragua, Columbia.

171. HEMISTEPHANIA JOHANNÆ, Bourc. P. Z. S., 1847, p. 45. —
Doryfera euphrosinæ ♂, Muls. and Verr. Ann. Soc.
Linn., Lyon, 1870-71, t. XXVIII, p. 319.
Bogota, Columbia.

172. HELIOMASTER LONGIROSTRIS, Vieill. Ois. Dor., 1802, t. I,
p. 107.
Bogota, Columbia.

173. HELIOMASTER PALLIDICEPS, Gould. P. Z. S., 1871, p. 504.
Veragua and Panama, Columbia.

174. PTEROPHANES TEMMINCKII, Boiss. Rev. Zool., 1839, p. 354.
Bogota, Columbia.

175. DOCIMASTES ENSIFERUS, Boiss. Rev. Zool., 1839, p. 354.
Bogota, Columbia.

176. BOURCIERIA PRUNELLI, Bourc. and Muls. Ann. Soc. Agri.,
Lyon, 1843, p. 36. — *Bourcieria assimilis*, Elliot.
Ibis, 1876, p. 56.

177. BOURCIERIA PURPUREA, Gould. Mon. Troch., vol. IV, p. 256.
Bogota, Columbia.

178. BOURCIERIA WILSONI, Delat. and Bourc. Rev. Zool., 1846, p. 305.
Juntas, Columbia.

179. CÆLIGENA COLUMBIANA, Elliot. Ibis, 1876, p. 57.
Bogota, Columbia.

180. HOMOPHANIA TORQUATA, Boiss. Rev. Zool., 1840, p. 6.
Bogota, Columbia.

181. HOMOPHANIA LAWRENCEI, n. sp.
Bogota, Columbia.

Male. — Crown metallic dark-green. Upperside dark bronzy-green, black in certain lights. Uppertail-coverts shining green. Median rectrices, bronze-green, lateral pale-buff with broad bronze-green tips. Wings purplish. Throat and sides of breast metallic dark green, most brilliant. Breast pure white. Abdomen, and flanks dark bronzy-green, almost black. Undertail-coverts shining green, with base of feathers pale buff. Bill black. Feet flesh colour with black nails.

Total length, $4\frac{7}{8}$. in. Wing, $2\frac{6}{8}$. Tail, 2. Culmen, $1\frac{1}{8}$.

It comes close to *H. insectivora*, but can easily be distinguished from that species by the colour of its rectrices.

I dedicate this magnificent species to Mr LAWRENCE, the celebrated American Ornithologist.

182. EUDOSIA TRAVIESI, Muls and Verr. Ann. Soc. Linn., Lyon, 1866, p. 25.
Bogota, Columbia.

183. HYPOCHRYSSIA BONAPARTEI, Boiss. Rev. Zool., 1840, p. 6.
Bogota, Columbia.

184. HYPOCHRYSSIA HELIANTHEA, Less. Rev. Zool., 1838, p. 314.
Bogota, Columbia.

185. CALLIGENIA LUTETIÆ, Delat. and Bourc. Rev. Zool., 1846, p. 307.
VOLCAN PURACÉ, POPAYAN AND BOGOTA, COLOMBIA.

In all **186 species**, and probably many more will be found, when all the valleys and mountains of this wonderful country will be thoroughly explored.

I do not think that any other country in America will ever surpass it.

I possess all the species except those marked thus : *

CHICAGO EXPOSITION

More than one thousand men are now at work on the mammoth Manufactures building for the world's Fair. The force was recently doubled by order of the Exposition authorities, who concluded that the contractor was not making as rapid progress as was desirable. The authorities are determined that all of the buildings shall be completed in time for dedication in October, and the public may be assured that this will be done. The total number of workmen at Jackson Park now exceeds 7,000. It will probably be increased to 10,000 or more.

A group of Caribs from the Lesser Antilles, descendants of the cannibal race discovered by Columbus on his second voyage, will be at the World's Fair, engaged in making baskets and in other native industries.

« We were overwhelmed with the magnitude of the preparations for the World's Fair. Yes, it is on a much grander scale than was the world's fair in Paris. We must admit it * * * Of course, I cannot give anything like definite figures, but the commercial display alone which France wil make will not fall short of \$ 20,000,000 in value. We will have over here an exhibit of everything the country of France produces. » These are the words of baron Alfred de Vialar, one of the three special French commissioners, who recently visited Chicago to arrange for the erection of the French building at the Fair.

The American Ostrich Company has sent to Chicago for exhibition at the World's Fair thirty birds from its ostrich farm at Fall Brook, San-Diego county, California. The ostriches have been sent on thus early in order that they may become thoroughly acclimated by the time the Fair opens and appear at their best.

It is reported that King Alexander of Servia has decided to visit the World's Fair next year. He is sixteen years old and son of the much talked of ex-King Milan and ex-Queen Natalie.

Again the cable has announced that Emperor William of Germany has decided to visit the World's Fair at Chicago next year. This time the *Allgemine Zeitung*, a leading paper of Munich, furnishes the information, and claims that it is authentic.

Yacht clubs and yacht owners, both on the lakes and seacoast, are to be invited to be represented at Chicago by their boats during the World's Fair. The invitations are to be official, and will be accompanied by detailed information concerning the depth of water in the various canals, the size of locks, etc. It is believed that several hundred yachts will accept this invitation.

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Bicarbolic Acid...	quart	2/-
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Ammonia		4/-
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Pocket corked box...	from	2/-
Corked box for Museums	24/-	doz.
— and glazed, splendid make...	36/-	"
Larger sizes can be supplied.		
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Pin box, with 1,000 pins	3/-	
Sea Compass	from	2/- to 50/-
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Boucard's tin collecting box, with two partitions	2/-	
Straight Scissors...	from	2/-
Curved	"	2/-
Taxidermist Knives	"	1/6
Long Forceps	"	3/-
Small	"	1/-
Insects' Nippers...	"	1/6
Sieve	"	2/-
Blowpipe for cleaning eggs...	"	2/-
Digger	"	2/- et 4/-
Folding ditto	"	6/-
Insect Pins, English, French or German	from	1/6 per 1000

Steel Pins for setting Butter	fl. 4/- per 1000
Setting Boards	1 to 2/- each
Butterfly Nets complete	from 1/6 to 5/-
Sweeping and water Nets	2/6
Cork in Sheets	3/- doz.
Magnifying Glasses	1/- to 5/-
Hammers	1/6 to 5/-
Naphthaline	4/- per lb.
Botanical grey paper	6/- ream
Folding Umbrella for collect- ing Insects	10/-
Steel Perforator for making holes in eggs	1/-
Cutting Pliers	2/-
Flat	2/-
Arsenical Soap	2/- per lb
Glass Tubes for small insects and shells	1/- doz.
Pill boxes for ditto	4/- gross
Flax	6d. per lb
Cotton wadding, per sheet	6d.
Fishing rods with accessories	2/-
Dredge for collect. shells, etc.	40/-
Taxidermist's case, containing	
1 Pair of Scissors, 2 Knives	
1 Lime, 1 Grater, 2 Pliers,	
1 Hammer, 1 pair of For- ceps, 1 Brush, 3 Gimlets,	
etc. Complete	from 12/- to 40/-
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2. " Small birds up to Tanagers	24s "
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" 11 2s 0d	5s 6d	" 10 7s 0d	9s 0d
" 12 2s 3d	7s 0d	" 11 8s 0d	10s 0d
" 13 2s 6d	10s 0d	" 12 9s 0d	11s 0d
	doz. of pairs		
" 14 3s 0d	1s 6d	" 13 10s 0d	13s 0d
" 15 3s 6d	2s 6d	" 14 11s 0d	13s 0d
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Yellow Bird of Paradise, at 20 shil. each		
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Jungle Cocks. 4 " "		
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Short " " " 4 " "		
Large Jacamar. 4 " "		
Small ditto. 1 " "		
Metallic Blue Merle. 2 " "		
Long Tail ditto. 2 " "		
Large Sea Gull 1 shilling each		
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Minuta. 2 " "		
Red Partridge. 2 " "		
California Quail. 1 " "		
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Heron Necks 2 " "		
King Fisher 1 " "		
Blue Jays sixpence "		
Grebes 1 shilling "		
Cock Feathers.		
Humm. Birds var. males. from sixpence each.		
— females two pence.		
Long Tail ditto males. from 1 shilling		
Blue Long Tail ditto 2 " "		
Fire Tail ditto. 20 "		
Blue Opale Butterflies fr. three pence.		
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OCTOBER 1892.

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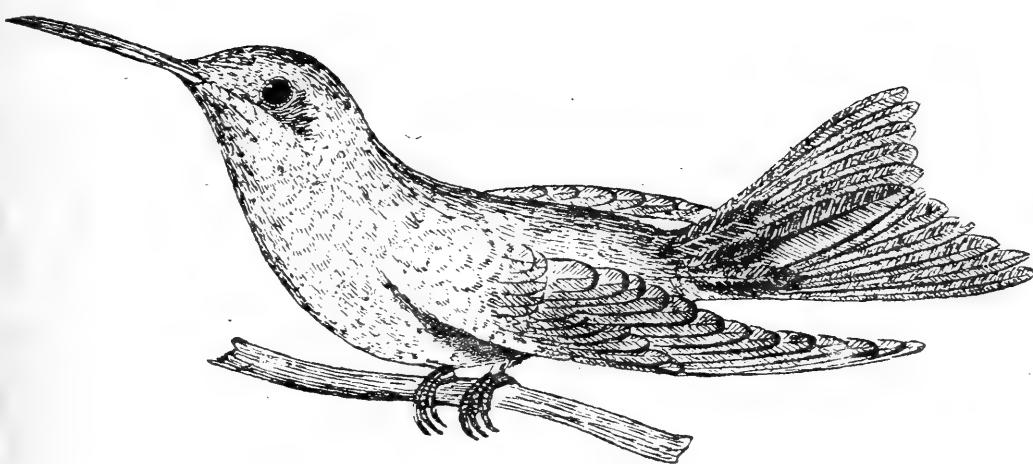
The Humming Bird

A MONTHLY

SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD



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All applications to be made at 225, High Holborn, London, W. C. (England), where photographs of the Villas can be seen.

CHRISTOPHER COLUMBUS

Christopher Colonus, not Columbus, although I shall continue to call him so, as being universally known under that name, was born in *Arbizolo*, a village near *Savona*, large town belonging to Genoa, and well known by all tourists going from the *Riviera* to Genoa or to Turin. His father was a fisherman. *Peter Bezarus Colonus*, his countryman, gives unquestionable proofs of his mean pedigree, saying amongst other things : *that the Common Wealth of Genoa refused to receive the great legacy, which COLONUS left them in his will; because they thought it a derogation to their honour being, so great a Republic, to take anything of bequest from a fisherman's son.* Yet His Majesty of Castille thought otherwise, not only enriching him with wealth, and a fair revenue for his discovery of *America*; but also raised him to great honour, ennobling him, the first of his family, with Dignities, Titles, and Escutcheon, which ranked him in place among his prime Nobility.

Columbus spent his youth near the sea, where he studied the winds, considering their natures, the quarters whence they rose, especially with the setting of the current from the *Atlantica* to the *Mediterranea*. The Western winds, which often as well as the Eastern ones, blow several days from the great Ocean gave him hints that there might be another *World*, and new places to be discovered beyond. He also spent much time in the emendations of charts and maps. At that time, the Portuguese had got the start in navigation from all others, and were busy to find a passage by South Africa to the East Indies, and Columbus sailed with them. soon after his return, Columbus settled in the island of *Madera*, where an accident happened, which *Francis Lopez de Gomesa* relates thus : « The Master of a ship, whose name and country lies buried in oblivion; but which belonged either to Spain or Portugal, was surprised by a tremendous tempest from the East, which hurried him through dreadful waves, where at last he found himself engaged upon a western coast altogether unknown. The storm ceasing, without making further discoveries, he picked his way homeward, at last landing in the haven of *Madera*. All his remaining crew, but three and himself, with hardship want, and the long voyage, having died, and himself dangerously ill was carried into the house of *Columbus*, where lying on his death-bed, he bequeathed to him his maps, journals, and other observations of this unfortunate voyage. »

Columbus, being by these papers, more confirmed than ever in his opinion of a new world in the West, declared what he really believed to the Republic of Genoa ; but they looked upon him as a vain and idle fellow ; yet *Columbus* full of his great project, thus flighted and scornfully rejected, addressed himself to the King of Portugal, where they wearied him, spending long time with dilatory answers to no effect, the opinion of a whole court of expert navigators having cast his declaration out as a chimera or mere fancy. Soon after, *Columbus* sent his brother to England to move the business to King Henry the Seventh, he being taken prisoner by the way, which prevented him to arrive in time to the English Court. For meanwhile, *Ferdinando* and *Isabella*, Kings of Castille, having finished the war with the Moors, had furnished him out for the expedition, which he effected by the favour of *Alfonso Mendotio* and *Alfonso Quintavilia*, both great Ministers of State under *Ferdinand and Isabel*, and obtained so much, at last, that he was sent with a hundred and twenty soldiers, besides seamen, in two ships and one pinnace. Thus supplied, he set sail from Cadiz upon the King's account, the fourth of August 1492, and first reached the Canary islands, and from thence steering southwest, the wind in thirty three days scarce varying one point ; but although the weather blew so constant, yet the seamen changed their mind, and stormed quite contrary crying, that *Columbus* was guilty of all their deaths, « for, said they, after they had lost sight of the *Canaries* so many days, nothing appearing but sea and sky. » *Who can hope for any success or happy conclusion of so desperate a voyage, so rashly undertaken and so full of eminent danger.* » Yet *Columbus* bore bravely up and weathered all their exclamations, although they threatened no less than his murder. At last, articling they came to this agreement. *That if after sailing forwards three days more, no land was discovered, they should return.* But about two o'clock the next night, *Columbus* saw a glimmering like fire in the sky and in the morning found himself close aboard a most pleasant coast, where landing with twelve men, he erected a cross cut out of a tree. Thence he sailed over to *Cuba* where the sea was so rough that he was forced to stand off, fearing rocks and shallow water. Soon after, he got to the northward of the island *Hayti* which he called *Hispaniola*. Here his best ship was bulged upon a rock on which they had all perished, had it not been flat on the top, so that the soldiers and the whole crew of seamen were saved by the other two vessels.

The inhabitants stark naked seeing these strangers, fled to the woods ; but the Spaniards overtaking a woman, they entertained her with sweetmeats and wine, and putting her on a white shirt, sent her again to the rest of the natives,

where returned, she told what good entertainment she had had to her companions ; whereupon several of the Islanders came aboard of the vessels, in boats made of one piece of wood, where they bartered gold for beads, pieces of glass, knives, shells and other trifles. The King of *Guacanarilla* gave testimony of peculiar inclination to the Spaniards, helping them to save up the remaining goods of the wreck, and informed them that some rivers flowing from the tops of high mountains washed down the gold amongst the sand, notwithstanding a strange prophecy had been told to these Islanders, namely : *that bearded men out of remote countries should destroy their Gods, take their land, and massacre their children.* He also told them what made them fly and betake them to their heels at their arrival, because they were often-times surprised by the *Cannibals*, who snatched up all they could lay hold on : their boys and strippings they gelded, cooping and cramming them up, as we our capons, for feast ; the young and well grown men, they chopped to pieces, salted and barrelled up. Young women they preserved for breed, and old ones they made slaves.

These *Cannibals* were so terrible to the inhabitants of *Hayti*, that a thousand dared not venture to engage against ten of them, but would run every way dispersed like flocks of sheep before the wolf.

Lastly their King permitted the Spaniards to build a lodge wherein thirty or forty of them might shelter ; but indeed, so taking possession, in right of the King of Spain.

Meanwhile, *Columbus* returned in safety to Spain, and was received with great joy, King Ferdinand making him Admiral of the Sea, and sending his brother *Bartholomew*, Governor to *Hayti*. The gold, parrots, aloes, yucca, and other products of the island were looked upon with great delight and admiration, but two of the natives being naked, with gold rings through their nose and ears, ornaments with them of high esteem, and signifying their no mean quality, the people old and young came in throngs to wonder at, never weary of gazing upon them ; and so ended the first voyage of *Columbus*, resulting in the discovery of *America*.

In September 1493, *Columbus* undertook his second voyage and discovered the Caribbean Islands, some of which he called *Dominica*, *Guadalupe*, *Monseratto Redondo*, *San-Martin*, *Santa-Cruz*, *San-Juan*, *Jamaica* and *Cuba*. He returned to Spain in March 1495. Early in 1495, he sailed for the third time, and discovered *Paria*, the actual *Para*, and *Cumana*.

On the ninth of May 1504, he sailed from Spain for the fourth time, and discovered the Islands of *Guamixa* and *Veragua*, probably what we know now, as the *Bocas del Toro*.

Shortly after, he returned to Spain, where he died the 8th of May 1506.

This notice on *Christopher Columbus*, was extracted from O'Gilby's AMERICA, published in London, 1671.

(The Editor.)

Thence it is exactly four hundred years that America was rediscovered by *Columbus*, and what do we see. That a Continent entirely unknown to the Europeans at that time has developed in such a wonderful manner that its actual population exceeds one hundred millions of inhabitants, and before the end of another century it will probably reach several hundred of millions; and what is more extraordinary still, is that all the races of manking are represented more or less in that grand Continent, and by intermixture between themselves are creating several new races of men, quite easy to distinguish at once from their original stock, new races full of vigour, enterprising, and anxious to show their vitality to the old World.

Honour and glory to the immortal CHRISTOPHER COLUMBUS, who has achieved such a successful discovery, under the guidance of THE ALMIGHTY!

A. B.

FESTIVITIES AND EXHIBITIONS

Held in honour of CHRISTOPHER COLUMBUS, in AMERICA, SPAIN, ITALY and France.

HIS HOLINESS POPE LEON XIII has sent to the Madrid Exhibition, held in honour of *Christopher Columbus*, the two celebrated Maps belonging to Borgia Museum, and dating from the time of the discovery of *America*, and probably they will be sent afterwards to Chicago. It will be the first time that the Scientists and Historians will be able to consult these precious and invaluable documents.

They have been remitted, by order of the Pope, to the Honourable Count Chacon, Spanish Ambassador in Roma.

On one of these maps can be seen the line delineated by POPE ALEXANDER VI, to put an end to the recriminations between Spain and Portugal.

The second one is from Diego Ribero. It was published in 1529 and contains all the parts of the New World, known at that time.

On the first of August, the SANTA-MARIA, an exact reproduction of the ship which carried Columbus and his followers to America, has anchored at Palos, the exact place where *Christopher Columbus* took his departure. It was escorted to Huelva by seven Spanish vessels, two men of war, the

Hirondelle, the Amphion, and two English torpedo boats. Seventeen men of war were then anchored at Huelva. Those which remained at Cadix took their places at the mouth of the river Huelva and saluted the *Santa-Maria*, when coming out from Palos.

Flags of all nations could be seen everywhere. It was a magnificent sight. The *Santa-Maria* will be exhibited at Chicago.

On the fourth of August, a magnificent historical retinue representing the departure of *Christopher Columbus* for America, took place at Genoa. Flags and draperies were abundant in all the principal streets.

The beginning of the festival was the remittance of the Admiral staff to *Christopher Columbus*, and the taking oath of the ship's crew. More than 900 persons in dresses of the epoch formed part of the retinue, sailors, soldiers, pages, etc. It was a grand affair.

On the eighth of September, the King and Queen of Italy arrived by sea at Genoa.

On that day, there was a great festival at the theatre.

On the ninth, Their Majesties visited the exhibition, and in the evening the Municipality gave a ball.

On the tenth, Their Majesties gave a dinner followed by a brilliant reception.

On the eleventh, a ball was given at Villa Raggio, Cornigliano.

On the twelfth, their Majesties visited the principal buildings and the Chief Commanders of the foreign squadrons assisting to the festivals.

On the seventh of August, there was a commemorative festival made in Rome in honour of *Christopher Columbus*. Several catholic Societies with flags and banners have been to *Pincio Square* and deposed crowns round the bust of the great Christian Navigator. The flag of the Society *la Romana* had the following inscription : « THE CATHOLIC ROMA TO CHRISTOPHER COLOMBUS, and was carried at the front of the retinue.

It was a great manifestation.

The Geographical Congress will take place this year, first in Genoa, and from that place the members will sail to Spain, so as to reach *Huelva* on the twelfth of October, date of the celebration of the anniversary of the discovery of America. The Honourable *Duke of Mandas*, the Spanish Ambassador in Paris, has taken under his high patronage the expedition of the members of the Congress to Huelva.

In the National Library of Paris, there is a special exhibition of Maps, Plans and Geographical documents of the sixteenth century. It contains maps on which can be seen an imaginary continent uniting America to India, as supposed by Christopher Columbus. In the maritime Maps, which have been used by french Navigators, are marked the areas of wind by which these intrepid sailors measured their course. Their rudimentary procedures, as rough, as their imperfect ships, are sure to produce in the mind of visitors a deep admiration for these men, who undertook these voyages of discoveries.

This Exhibition is installed on the first floor of the Library, in the geographical Section. It will remain opened to the public, until the end of October next.

On the thirtieth of August last, was launched at Barcelona the ship **Nina**, constructed at the expense of the United-States Government for the celebration of the Columbian festivals at Chicago. The launching was done with great ceremony. The Bishop of Barcelona has blessed the ship, and the American squadron has saluted the launching with the national Spanish and American anthems. The ship has replied by arboring the Spanish flag. There was an immense crowd assisting to the launching, which was very successful. It is now on its way to Chicago.

The inauguration of the CHICAGO EXPOSITION will be done in a wonderful manner. The venerable MARQUESS of VERAGUA, the direct descendant of Christopher Columbus, to whom has been attributed the honour of presiding the Opening of the Exposition, not being able to go to Chicago, in consequence of his old age, will give the signal from his own mansion in Madrid.

At a fixed hour, in his appartement, he will touch an electric knob, which by the submarine cable will transmit the current to Chicago, and will put in motion all the machines at the Exposition. The effect will be magical.

CAPTAIN ANDRÉWS, who, on July 20th last, set sail alone from Atlantic City, New-Jersey, in a small boat only 15 feet. long, arrived at Lisbon safely late on Wednesday night. He intends to proceed to Huelva in order to attend the Columbus celebrations at that port.

The United Congress of the United-States has just decided that the Official Opening of the Chicago Exhibition will take place, not the twelfth of October, as previously stated, bu

the 21th of this year, Christopher Columbus having set foot on American soil, the twelfth of October 1492, of the Julian Calendar date, which correspond to the 21th of October of the Gregorian Calendar.

PROGRAMME

OF CEREMONIES ATTENDING THE DEDICATION OF THE BUILDINGS OF THE WORLD'S COLUMBIAN EXPOSITION OCTOBER 20, 21, 22, 1892, CHICAGO, ILL. — U. S. A.

When the Congress of the United-States authorized the commemoration of the Four Hundredth anniversary of the discovery of America by an International Exposition to be held in Chicago during the summer of 1893, it also provided that the Exposition buildings should be dedicated on the twelfth day of October 1892, with « appropriate ceremonies ». Subsequently, by act of Congress, this date was changed to October 21 1892.

Aside from the international interest in this fitting prelude to the magnificent picture of the world's progress that will be presented in 1893, this dedicatory service will furnish an opportunity for the world to behold the extent of the preparations which are being made for the Exposition.

The task of preparing a programme of ceremonies which will appropriately herald the greater spectacle commemorating the discovery, development and progress of the New World, has been a work involving great care and the consideration of many difficulties. The following programme of the dedicatory exercises and incidents connected therewith is submitted as the result of this thought and purpose :

The evening of Wednesday, October nineteenth, a grand reception will be tendered the President of the United-States, his cabinet and other distinguished guests at the Auditorium. After the close of the ceremonies on each of the three succeeding evenings, there will be magnificent pyrotechnic displays.

THURSDAY, OCTOBER TWENTIETH

THE CIVIC CELEBRATION

The first day will witness an imposing procession, indicative of peace, contentment and prosperity, participated in by civic organizations, which will be reviewed by the President of the United-States, his cabinet, the Congress and other honored guests.

In the evening, at Jackson Park, amid myriads of electric

lights and other displays, a water pageant, « The Procession of the Centuries », will move through the beautiful waterways of the Exposition grounds, illustrating with beauty and historic accuracy some of the great facts of history connected with the discovery of America, such as the condition of this country prior to the landing of Columbus; striking events in the life of the great discoverer; important epochs in American history and the world's progress in civilisation. The vessels upon which these tableaux will be represented vary from 40 to 53 feet in length, modeled after the naval architecture of the period represented; for example, « Columbus before the Court of Spain », will be represented upon a vessel modeled after the lines of the « *Santa-Maria* ».

The following subjects will be illustrated:

- 1st. Aboriginal Age ; representing the American Indians.
- 2d. The Stone Age ; representing the Cliff Dwellers.
- 3rd. The Age of Metal ; representing the Aztecs, their religious rites, manners and customs.
- 4th. Columbus at the Court of Ferdinand and Isabella.
- 5th. Departure of Columbus from Palos.
- 6th. Discovery of America.
- 7th. Columbus before the Court of Ferdinand and Isabella, presenting natives, and the strange products of the new country.
- 8th. English Cavaliers and the settlement of Jamestown.
- 9th. Hendrick Hudson ; discovery of the Hudson river ; Dutch settlement of New-Amsterdam.
- 10th. Landing of the Pilgrims, and illustrations of early Puritan life.
- 11th. Ferdinand de Soto ; discovery of the Mississippi.
- 12th. The French explorers. Pierre Marquette, Chevalier La Salle, and the Northwest.
- 13th. Washington and his generals.
- 14th. Signing of the Declaration of Independence.
- 15th. Union of the colonies ; the thirteen original states ; the sisterhood of the Great Republic welcoming the territories to the constellation of the states.
- 16th. « Westward the course of empire takes its way. »
- 17th. The genius of invention ; application of steam, etc.
- 18th. Electricity and electrical appliances.
- 19th. War ; representing valor, sacrifice, power, death, devastation.
- 20th. Peace ; representing tranquillity, security, prosperity, happiness.
- 21st. Agriculture.
- 22nd. Mining.
- 23rd. Science, Art and Literature.
- 24th. The Universal brotherhood of man; equal rights, law of justice ; Liberty enlightening the world.

FRIDAY, OCTOBER TWENTY-FIRST

DEDICATION DAY

The National salute at sunrise will inaugurate the ceremonies of Dedication Day. The President of the United-States, his Cabinet, members of the Supreme Court, members of the Senate and House of Representatives, distinguished foreign guests and governors of the different States and territories with their official staffs, will be escorted by a guard of honor composed of troops of the United-States Army, detachments of the United-States naval forces, and regiments from the various state National Guards, to the Manufactures and Liberal Arts building, in which the dedicatory exercises will be held.

At one o'clock in the afternoon in this building, the following dedicatory programme will be carried out under the direction of the Director-General :

1st. Columbian March. Written for the occasion by Prof. John K. Paine.

2d. Prayer by Bishop Charles H. Fowler, D.D. L.L.D., of California.

3d. Dedicatory Ode. Words by Miss Harriet Moroe, of Chicago ; music by G.-W. Chadwick, of Boston.

4th. Presentation of the master artists of the Exposition and their completed work, by the Chief of Construction.

5th. Report of the Director-General to the World's Columbian Commission.

6th. Presentation of the buildings for dedication, by the President of the World's Columbian Exposition to the President of the World's Columbian Commission.

7th. Chorus. « The Heavens are Telling. » — Haydn.

8th. Presentation of the buildings for dedication, by the President of the World's Columbian Commission to the President of the United-States.

9th. Chorus. « In praise of God. » — Beethoven.

10th. Dedication of the buildings by the President of the United States.

11th. Hallelujah chorus, from « The Messiah. » — Handel.

12th. Dedicatory oration, Hon. Wm C.-P. Breckinridge, Kentucky.

13th. « The Star Spangle Banner » and « Hail Columbia », with full chorus and orchestral accompaniment.

14th. Columbian oration, Chauncey M. Depew, New-York.

15th. National Salute.

At the close of this programme, a special electric and pyrotechnic display will be given, with a repetition of « The Procession of the Centuries ».

SATURDAY, OCTOBER TWENTY-SECOND

THE MILITARY CELEBRATION

A series of military manœuvres and parades will constitute the main portion of the day's programme. In the evening attractive and appropriate celebrations will be provided, followed by a magnificent display of fireworks.

A number of brilliant social entertainments will be given by the citizens of Chicago during the three evenings of the dedication celebration.

CHICAGO EXPOSITION

FRUITS AND FLOWERS AT THE FAIR

The horticultural display at the Exposition will surpass all previous ones, and will be beautiful beyond description.

The horticultural display at the World's Fair will be bewildering in extent and marvelous in beauty. The exhibit will possess great scientific and educational value, but to the ordinary visitor its ornamental features will be the most striking. Indeed, it will play an important part in the adornment of the great Exposition. While in almost every part of the Exposition grounds may be seen gratifying evidences of the very efficient work of the Horticultural Department, the central point of interest will naturally be in the exhibit in the Horticultural building. This structure is 998 feet long and has an extreme width of 250 feet. Its plan is a central pavilion with two end pavilions, each connected with it by front and rear curtains, forming two interior courts, each 88 by 270 feet. Surmounting the central pavilion is a beautifully proportioned dome, 187 feet in diameter and 113 feet high.

In the south pavilion of the building will be installed the viticultural exhibit, embracing all varieties of wine and everything pertaining to its manufacture. An idea of how complete this part of the exhibit will be can be gained from the fact that applications for space have already been received from thirty-three foreign countries. From abroad the exhibits of France, Germany, Spain and Italy will be especially notable. A fine exhibit of Chilean wines and raisins, famed for their superior quality, will be made. California will make a splendid display, all of the great firms being exhibitors and having applied for much more space than can possibly be allowed

them. If permission, which has been asked, be given, Senator Stanford will exhibit a wine fountain. This, as planned, will throw, for two hours each morning and afternoon, graceful streams of wine to the height of 22 feet.

In the rear curtains of the building will be shown the fruit exhibit, which will include all varieties grown in any part of the world. As far as it is possible to do so, probably in a great majority of cases, fine specimens of the naturel fruit will be shown. Otherwise wax models, so perfect in appearance as to be indistinguishable from the real fruit, will be substituted. For this exhibit about 44,000 square feet, or more than an entire acre of space, is reserved. A very complete and splendid exhibit of citrons and other fruits will be sent from California, Florida, Mexico and South American countries. By means of refrigerators ripe fruits can be sent long distances without injury, and after reaching the Fair cold storage facilities will be available to keep it in perfect condition.

The exhibit in the important line of floriculture will be exceptionally extensive, and the preparation of it is far advanced. Unless, this were the case the exhibit could not well be a success, for time is required for the plants to overcome the check received in being transplanted. More than 50,000 transplanted shrubs and plants, of many species, are now growing in the exposition grounds and the number is rapidly increasing. The Department sent out circulars to prominent horticulturists and horticultural societies in all parts of the world, requesting donations of plants and agreeing to permit the name and address of the donors to appear in connection with such specimens as they might send. The result is that thousands of plants, — excellent specimens, too, — have been forwarded. Among them are more than 50,000 rare rose plants, which have been donated by firms all the way from California to Hungary.

The floricultural exhibit will not be concentrated in one place. In the front curtains of the building will appear the greenhouse and hothouse plants,—a very large variety and many rare and beautiful specimens. There, too, will be the finest display of orchids ever seen in this country if not in the world. One firm alone will spend \$ 40,000 on its orchid exhibit. At the opening of the Fair, Chief Samuels says, there will be a display of 2,000 different varieties of orchids, embracing fully 15,000 specimens. Beneath the great dome will be the largest tropical plants obtainable, including Japanese and Chinese bamboos 75 to 80 feet high, palms 30 to 40 feet high, and tree ferns 15 feet or more in height. There will also be a miniature mountain covered with tropical plants and in a cave within will be tried the experiments of growing plants by the aid of electric currents, passed

through the soil, both of which, it is claimed, have been accomplished with remarkable results.

The two courts of the Horticultural building will be filled with orange groves from California and Florida, respectively. In each there will be not less than 160 trees, each bearing about 200 bright, ripe oranges. Thus an interesting comparison may be made between the oranges of the two states as to size and flavor, etc. The courts will also contain growing specimens of lemons, limes, bananas, etc. California would like to make a much larger display than will be possible, and applied for about fifty times as much space as could be assigned. It will occupy an acre on Midway Plaisance with a citrus exhibit. On the Plaisance too, five acres will be devoted to a nursery exhibit, and Wisconsin will show there a cranberry marsh. Six acres in front of the Horticultural building will be devoted to the floricultural exhibit, as will also space about many of the larger buildings.

«The wooded island», or as more properly named, perhaps, the flowery island, will be one of the most beautiful and attractive spots at the Exposition. It embraces between 15 and 16 acres, and has been turned over almost entirely to the Horticultural Department for its exhibits. There, literally speaking, will be acres and acres of flowers of brightest and most varied hues and pleasing perfume. Little groves of trees, clumps of shrubbery and sinuous walks will relieve the gorgeous monotony of this floral display. On the north end of the island, Japan will build its strange, antique temple and surround it with the choicest plants and flowers of the island realm of the Mikado. At various turns of the winding walks which thread this delightful domain of the flowers, the visitor will encounter artistic little structures of the summerhouse description, within which one may seat himself and enjoy rest and beauty and perfume. Many of these retreats, — 16 or 18 in number, — will have thatched roofs and be covered with growing vines, and otherwise ornamented in keeping with their beautiful surroundings.

In the north pavilion of the Horticultural building will be a very extensive display of vegetables, canned goods, horticultural appliances, etc. In the second story of each pavilion, will be a restaurant capable of seating about 200, and profusely adorned with ferns, flowers and exotic plants. Outside will be a number of greenhouses, where visitors may see an exceptionally complete collection of tropical vegetation. There will also be large auxiliary greenhouses, not open to the general public, where plants will be brought to perfect exhibit condition, and where plants will be cared for, after their beauty season has passed.

It may be rightly inferred that the Horticultural exhibit at the Exposition, will be the most complete and extensive

ever made or attempted. It is certain to attract a great deal of attention and prove to be of great scientific and educational interest. It will have important features not specified above, as, for example, a very complete collection of insects, both the injurious and the beneficial ones, whose operations affect the fruits and other products of the horticulturist. It is the intention to have in one place an exhibit of all of the species of plants mentioned in the Bible, and in others collections of almost equal historical interest.

Both Chief Samuels, who has general charge of the Horticultural Department, and Chief Thorp, who looks after the floricultural division of the exhibit, have proved themselves to be the right men for their respective duties, and it is already assured that the display which, with the active and generous aid of horticulturists the world over, they will furnish, will be long and pleasantly remembered by every one who VISITS THE WORLD'S FAIR.

WORLD'S FAIR MUSIC

It will be the finest which talent, good judgment, and money combined can supply.

The fact that Theodore Thomas is musical director of the World's Columbian Exposition, and that associated with him are William L. Tomlins and George H. Wilson, is assurance sufficient that music of the highest order, and an excellent programme will be provided. The best musical talent of the world will be drawn upon; fine halls will be provided; and something like half a million dollars will be expended to make the musical features of the Exposition a success. Two of the halls or auditories will cost each \$ 100,000, and \$ 175,000 has been set apart for an orchestra of 120 skilled musicians, who will be drilled by Theodore Thomas. This orchestra will be the nucleus about which will be formed the grand choruses.

The Bureau of Music of the Exposition has issued the following outline of its plans, from which it will be seen that the plans are comprehensive and promise most gratifying results :

Recognizing the responsibility of his position, the musical director groups all intended illustrations around two central ideas :

1. To make a complete showing to the world of musical progress in this country in all grades and department from the lowest to the highest;

2. To bring before the people of the United-States a full illustration of music in its highest forms, as exemplified by the most enlightened nations of the world.

In order to carry out this conception of the unexampled opportunity now presented, three cooperative conditions are indispensable :

« 1. The hearty support of American musicians, amateurs and societies, for participation on great festival occasions of popular music and for the interpretation of the most advanced compositions, American and foreign;

« 2. The presence at the Exposition of many of the representative musicians of the world, each to conduct performances of his own principal compositions and those of his countrymen, all upon a scale of the utmost completeness;

« 3. A provision on the part of the Exposition authorities of the means necessary, for carrying out these plans in the erection of the halls indispensable for successfull performances and in the engagement of solo artists, orchestras and bands.

« Consideration of these three lines of inquiry has taken much time, but progress is sufficiently advanced to permit the Bureau of Music the following preliminary announcement :

« The halls have been officially agreed upon and their construction ordered. These will be advantageously situated within the Exposition grounds :

« 1. A Recital Hall, for quartet, concerts, etc., seating 500 people;

« 2. A Music Hall, with accommodation for 120 players, 300 singers, and an audience of 2,000;

« 3. A Festival Hall, for performances upon the largest practicable scale with 200 players, 2,000 singers, and audience of 7,000.

« The Music Hall will contain a fine concert organ, and in Festival Hall will be placed an organ for chorus support.

« The appointed Commissioner to Europe who was sent to tender the invitation of the Exposition to the most distinguished composers has returned with an encouraging report, which insures a series of international concerts unprecedented in point of scope and character.

« The invitation of the Bureau to choral societies to cooperate because of their love of art and the pride they have in the opportunity the Exposition, will afford to show to the world the artistic level of the United-States in music having brought many assurances of support. In as much as it would be manifestly impossible for the same chorus to take part in all choral performances, this work will be divided among choral societies of the entire country.

« The Musical Director assumes that thousands of singers and music lovers will visit the Exposition in any case, and that they will prefer to appear as contributors, thus conferring an importance upon their societies and their homes, not possible under any other circumstances. These forces being directed

and guided, as they must be, in combined effort, the necessary preparation for their appearance at the Exposition will afford intelligent direction to efforts that in some parts of the country, are now being wasted for want of a commanding object of work.

« The entire range of the performance proposed may be seen from the following tentative classification :

« First — Semi-weekly highgrade orchestral concerts in Music Hall.

« Second — Semi-monthly high grade choral concerts in Music Hall.

« Third — Six series of international concerts, choral and orchestral, each consisting of from four to six in Festival Hall and in Music Hall.

« Fourth — Three series of three concerts each of oratorical festivals, by united American choral societies in Festival Hall.

« Fifth — Concerts in Festival Hall under the auspices of German singing societies.

« Sixth — Concerts in Festival Hall under the auspices of Swedish singing societies.

« Seventh — Six series of popular miscellaneous festival concerts by American singers.

« Eighth — Twelve children's concerts by Sunday-school, public school and especially organized children's choruses.

« Ninth — Chamber music concerts and organ recitals.

« Tenth — Popular concerts of orchestral music, to be given daily in Choral Hall during the six months of the Exposition.

« To successfully carry on such a series of performances as are outlined above, a large corps of musicians will be needed, some of whom will be engaged for the entire period of the Exposition; others for single and series performances.

« The complete success which the Musical Director seeks can be secured only by the loyal cooperation of individuals artists, large and small choral and instrumental societies and organized amateurs in general. Such cooperation he earnestly asks, and in subsequent papers to be issued by the Bureau, details of organization and appearance at the Exposition will be given.

« Regarding the standard of performance to be observed in all departments of Exposition Music, the Musical Director holds that while co-operation is asked of all grades of attainment every musical illustration there produced must be justifiable upon artistic principles. That is to say, it must be what it honestly purports to be.

« THEODORE THOMAS,

« WILLIAM L. TOMLINS,

« GEORGE H. WILSON.

« Approved :

« GEORGE R. DAVIS, Director General. »

Baroness Burdett-Coutts, the celebrated philanthropist, who is at the head of the philanthropic section of the English Women's Department in the World's Fair, according to the London press, will cross the Atlantic to attend the Fair, and will read an original paper on the subject of women's institutions conducted by women.

Mrs French-Sheldon, the intrepid African traveller, has applied for space for exhibiting at the World's Fair the fine collection of curious and trophies she has gathered.

From California is to be exhibited at the World's Fair one of the famed huge redwood trees, or *Sequoia gigantea*. The one selected is 300 feet high and more than 30 feet in diameter at the base. A specially constructed train will be necessary to carry the monster across the continent. It is the intention to hollow the base into booths in which will be sold California wines, fruits and curiosities made of polished redwood.

It has been explained by Director General Davis and other World's Fair officials, who are inclined to favor Sunday opening, that it is not the intention or desire that the Fair shall be opened on Sundays in the "wide" way in which it will be on week days. On the contrary, they would have the machinery stopped, all manufacturing processes at a standstill, and every description of work by employes reduced to a minimum. Religious services and choral and other musical entertainments could be held in the numerous halls and auditoriums which the buildings will contain. The people could stroll through the park, viewing its resplendent beauties of nature and wonderful achievements of man's handiwork ; could enter the buildings to enjoy the work of painter and sculptor, and to learn and profit from exhibits of innumerable description. Very few employes, comparatively, would be required to remain on duty on Sunday, and those chiefly for watchmen and guards. These would not be required to work seven days in the week. To care for the thousands of visitors at the Fair on Sunday, would not require more persons to work on that day than would be necessary were those same thousands to go elsewhere. Had it been understood from the beginning that the Sunday opening of the Fair would be of the kind indicated, — orderly and educational, instead of noisy and demoralizing, — it is believed that the petitions and protests against a Sunday Fair would have been far less numerous.

Naturalists' Agency, 225, High Holborn, London, W.C.

PRICE LIST of Utensils necessary for the collecting of Mammals and Birds' Skins, Reptiles, Fishes, Insects, Shells, etc., etc.

Bicarbolic Acid...	quart	2/-	Steel Pins for setting Butterflies	4/- per 1000
Rectified Benzoline...	"	2/-	Setting Boards...	1 to 2/- each
Boucard's Insecticide	lb.	4/-	Butterfly Nets complete	from 1/6 to 5/-
Ammonia	"	4/-	Sweeping and water Nets	2/6
Collecting corked box from 1/ to 5/- each			Cork in Sheets	3/- doz.
Pocket corked box...	from	2/-	Magnifying Glasses	1/- to 5/-
Corked box for Museums	24/-	doz.	Hammers...	1/6 to 5/-
— and glazed, splendid make...	"	36/-	Naphthaline	4/- per lb.
Larger sizes can be supplied.			Botanical grey paper	6/- ream
Botanical box ...	from	2/6 to 6/-	Folding Umbrella for collecting Insects	10/-
Pin box, for 12 grosses of different sizes	"	1/6	Steel Perforator for making holes in eggs	1/-
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Collecting bottles with large opening.	from	6 d.	Arsenical Soap	2/- per lb
Boucard's tin collecting box, with two partitions	"	2/-	Glass Tubes for small insects and shells	1/- doz.
Straight Scissors	from	2/-	Pill boxes for ditto	4/- gross
Curved	"	2/-	Flax	6d. per lb
Taxidermist Knives	"	1/6	Cotton wadding, per sheet	6d.
Long Forceps	"	3/-	Fishing rods with accessories	2/-
Small	"	1/-	Dredge for collect. shells, etc.	40/-
Insects' Nippers	"	1/6	<i>Taxidermist's case</i> , containing	
Sieve	"	2/-	1 Pair of Scissors, 2 Knives	
Blowpipe for cleaning eggs	"	2/-	1 Lime, 1 Grater, 2 Pliers,	
Digger	"	2/- et 4/-	1 Hammer, 1 pair of Forceps,	
Folding ditto	"	6/-	etc. Complete	from 12/- to 40/-
Insect Pins, English, French or German	from	1/6 per 1000	Shell-emptying with handle	1/-

All other utensils for Naturalists can be had at a short notice, by ordering at the NATURALISTS' AGENCY.

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No. 1. For Humming birds and Small birds	"	"	at 20s per hundred
2. " Small birds up to Tanagers	"	"	24s "
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" 11 " 2s 0d	5s 6d	" 10 " 7s 0d	9s 0d
" 12 " 2s 3d	7s 0d	" 11 " 8s 0d	10s 0d
" 13 " 2s 6d	10s 0d	" 12 " 9s 0d	11s 0d
" 14 " 3s 0d	1s 6d	13 " 10s 0d	13s 0d
" 15 " 3s 6d	2s 6d	14 " 11s 0d	13s 0d
" 16 " 4s 0d	2s 6d	15 " 13s 0d	13s 0d
" 17 " 8s 0d	3s 0d		Larger size can be made
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Villa Maria Luigia and *Villa Rondo* n° 25, the smallest, are actually let unfurnished, 3,800 francs per annum, for several years. — *Villa Rondo* n° 27, is worth 4,200 francs. When let furnished, they produce about £ 400 per annum.

All applications to be made at 225, High Holborn, London, W. C. (England), where photographs of the Villas can be seen.

To the venerable MARQUIS OF VERAGUA
Descendant of the most illustrious
Don CRISTOBAL DE COLON

This notice is dedicated.

America

By A. BOUCARD

Is AMERICA the same Continent mentioned by the Ancients as ATLANTIS ?

There are good reasons to believe that such is the case ! If *America* is not the Continent known under that name, *Geology* teaches us that it is very likely a part of it. Deep sea soundings effectued in the Atlantic, between the *Canary Islands* and the *ANTILLÆ* furnish the clearest evidence that during the *Tertiary period*, that portion of the bed of the *Atlantic*, which rises nine thousand feet above the lowest depths, and stretches over two thousand miles, from east to west, was dry land.

PLATON is the first who mentioned the name of ATLANTIS in two of his works which have reached us.

PLATON, by his mother, was the grand nephew of SOLON, the lawgiver of *Athens*.

SOLON had learned the existence, and the disappearance of the *Atlantis* by the Egyptian priests of *SAIS*, during his travels in *Asia*, and in *Lybia*.

This was about six hundred years before CHRIST. The *Sais* priests communicated to *SOLON*, that in the books kept in their temple, it was mentioned that at a time, one Continent inhabited by the *Atlantes*, existed beyond the pillars of *HERCULES*. « what we know nowadays as the *Strait of Gibraltar* ».

The *Atlantes* once invaded *Europa*; but were routed by the *Pelasges*.

It was mentioned also in the said books that shortly after, the whole of that Continent disappeared after a tremendous earthquake, and an overflow of the *Sea*. Their chronological tables gave the date of that frightful cata-

clysm as having occurred nine thousand years before. Thus we see that SOLON, PLATON, and many of the ancient PHILOSOPHERS, HISTORIANS and GEOGRAPHS, have admitted the existence of the *Atlantis*.

This belief dormant during a long time, reappeared during the Middle Age, when the Greeks, driven away from Constantinople, took refuge in Italy.

CHRISTOPHER COLUMBUS did believe in it thoroughly, and it is very probable that it was with the idea of rediscovering what remained of that wonderful Continent, that he undertook his celebrated voyages of discoveries.

During his stay in the *Acores*, he must have been more convinced than ever that he was on the right tract; as these islands, inhabited by the *Guanches*, must certainly be considered as remnants of that famous Continent, and the *Guanches*, as the descendants of the *Atlantes*:

The same can be said of the *Antillæ*, first discovered by *Columbus*, and inhabited by the *Carribs*.

The *Guanches* and the *Carribs* possessed the same shaped skull, and their languages were both akin to the aboriginal tongues of AMERICA.

Therefore if we go back several thousand years before the cataclysm, which caused the disaggregation of that vast Continent, known by the Ancients as *Atlantis*, and if we take into account all the discoveries which modern Geology has made of late, it is very reasonable to suppose that AMERICA, formed part of the wonderful ATLANTIS of the Ancients.

It is certain that AMERICA is a very old Continent, which from immemorial time has been populated by various races of men.

Its first inhabitants were what the Ancients termed ATLANTES who had intercourse with EUROPA, AFRICA and ASIA, and which remnants are the *Guanches* of the *Acores*, the *Carribs* of the *Antillæ*, and probably many other American tribes.

After the cataclysm, resulting in the disappearance of a large part of the ATLANTIS, all communications between what remained of these people, and the other Continents ceased entirely.

SECOND EPOCH

Several thousand years after the cataclysm, the north of AMERICA was invaded by the Tartarians, the Indians and the Chinese, when these countries were so densely inhabited that the struggle for life dispersed them in all directions. It is reasonable to suppose that this event took place in time of the great *Tamerlane*, and before. This was easy for them to ac-

complish by the Strait of Behring, the only obstacle between *Tartary* and *America*.

It is possible also that some Japanese may have been stormed on the Pacific Coast at one time or other.

The voyage just made by Mr ANDREWS, American publicist, from New-York to Huelva, in a boat fourteen feet long, shows that it was not such an impossibility for the *Phenicians* or other expert Navigators to have done the same. M. Andrews started from New-York the 21th of August 1892 and arrived at *Huelva* on the 29th of September. He made the voyage quite alone.

JOSEPH DE ACOSTA tells us: « That in fifteen days time, he got with a northerly wind from *Canaries* to *America*, and his voyage could have been shorter still, if he had dared to make use of more sails. »

From these races intermixed with the natives, it is reasonable to suppose that many of the tribes of *North and South America*, inhabiting that Continent, at the time of its discovery, derives.

I have met with many Chinese, who after two years settlement in Costa-Rica, had acquired a facies so like that of the Indians, that it was quite impossible to distinguish one from the other. Furthermore I met with many genuine Indians which could be more easily taken for Chinese than the Chinese themselves.

What I say of *Chinese* can also be applied to the East Indians and Tartarians, which I consider as of the same race, so it seems that *ASIA*, the mother of all people, may have been also the implanter of *America*, and what could be done more easily when we know than these parts of Asia have been very densely inhabited since the remotest ages.

According to MICHALON LITHOUWER (Ennead. 9, l. VI, 1,200), there is scarce a city in *Tartary* that boasted less than a thousand temples. The great number of the Tartars may appear by the several people spread far and near over *Tartary*. *Pliny* reckons some of them as *AUCNETES*, *NEURI*, *GE-LONI*, *THUSSAGETES*, *BUDINI*, *BASILIDES*, *NOMADES ANTROPOPHAGI*, *HYPERBOREI*, *CICIANTHI*, ETC., ETC.

Both the Tartars and American Indians in common with the Chinese, are differencied from the other races of men by special marks, of a more than the ordinary and natural distance between the eyes, which much alter the appearance of the face, the plumpness and swelling of their cheeks summits above the cheek bone, their middle stature, their downy hair upon the chin.

Alike the Tartars, they differ amongst themselves in their customs, yet in several things they agree one with another. They bear a great respect to their chiefs. Polygamy is still in use among both. They acknowledge the immortality of the soul. Both, like *Cannibals*, eat and sacrifice man's flesh;

or, on the contrary, not only detest humane, but all kind of flesh. Both worship the Devil.

In some temples of Virginia were found the horrible images of the Devil OKA.

The American Indians worshipped the Sun as did the Chinese and the Egyptians. The Peruvian Incas were called, *Son of the Sun*, as are called also, even now, the EMPERORS OF CHINA.

So was called FERDINAND CORTEZ, by the Mexicans.

The ancient characters employed by the Chinese in their writing consisted of serpents, that by several wreathes and contortion winding signified several things ; others consisted of agrestic tools belonging to husbandry ; some of feathers of birds, oysters and worms, roots, herbs, bird-claws, turtles, herbs and bird feathers mixed, planets, and such like, etc., etc., and so it is with the American Indians. In the Mexican manuscripts which have been preserved from destruction, we can clearly see that the same characters were employed by the Mexicans.

In the National Museum of *Mexico* can be seen two blocks of stone, which were first taken from the grand TEOCALI which existed on the site, where now stands the Cathedral of Mexico. These stones were first made use of in the building of the first Cathedral, which was razed in 1626. At that time, they were put away. These stones formed the outlines of the ancient mexican Temple. One is sculptured with feathers, the other with snakes.

Many other stones with similar figures have been found now and then.

Many more similarities could be traced between them ; but enough has been said to show the great analogy existing between the American Indians, and the Asiatic populations, and it is very reasonable to suppose that Asia has contributed largely to the civilisation of the American Indians as found by Hernando Cortez and others at the time of the Conquest.

Hence the Tartarians and Chinese are the first who rediscovered AMERICA.

THIRD EPOCH

Now we come to a comparatively modern period, that of the travels of LEIF, son of ERIC THE RED, who at the beginning of this Century, discovered a rocky and flat country, which he called HELLULAND. Soon after, he discovered another wooded country, which he called MARKLAND. Two days after, he arrived at the mouth of a river, and ascending this river he arrived to a beautiful lake, abounding in fish and wild birds. He was so delighted with the country surroun-

ding that lake that he determined to remain there all the winter. To that effect, he had several houses built. It appears that the place, then discovered by LEIF, is the same where the actual BOSTON stands. This land where he found some wild grapes, was called VINLAND.

In the following spring, LEIF returned to *Groenland*.

THORWALD, another son of ERICH THE RED, came back to VINLAND the year after, and remained there three years, at which time he was killed in an encounter with the natives of the country.

Soon after THORNSTEIN, the third son of ERICH THE RED went also to VINLAND. He was accompanied by his wife GUDRID, but he did not remain there, and died soon after his return to GROENLAND.

His widow married a rich merchant of Iceland named THORFINN HARLSEFNE, and soon after they started with three ships and one hundred and sixty men to VINLAND. This was in 1007. One year after, she gave birth to a son who was called SNORRE, son of *Thorfinn*.

After the death of her second husband, GUDRID went to Roma, where she contributed to spread the news of this great discovery. In effect we see that in 1142, ERICK UPSI was created Bishop of ICELAND, GROENLAND and VINLAND, by POPE PASCAL II.

Up to 1347, constant communications were kept between these three countries ; but, at that time, the cholera having reduced the population of *Norway*, from two millions to three hundred thousand inhabitants, the emigration for these countries ceased entirely. But the tradition of this land has been faithfully kept by the *Norwegians*.

Hence, there is not the least doubt that AMERICA was rediscovered a second time by the Vikings or Northmen, about four hundred and sixty five years before the discoveries of CHRISTOPHER COLUMBUS.

But this don't lesson in any way the glory of the great Genoese Navigator because the discoveries made, firstly by the Tartarians and Chinese, and secondly by the sons of *Erick the Red* were of little consequence for the rest of the World ; meanwhile those of COLUMBUS have been and will be of the utmost importance to all MANKIND.

However it is probable that some of the descendants of the followers who accompanied the sons of *Erick the Red*, found their way in the interior, reached Mexico, and were the factors of great changes in the internal Economy, Civilisation and Government of that COUNTRY.

FOURTH EPOCH**PRINCIPAL EXPEDITIONS TO AMERICA
By Europeans, since Leif, son of Erick the Red.**

In the year 1170 of our era, died OWEN GUYNETH, *Prince of Wales*, leaving several sons who quarrelled over his succession.

Amongst them was MADOK, a Prince of mild disposition, who threw up his share and sought for new fortunes abroad; whereupon there were many who ventured their lives with him. So rigging a small fleet, he sailed westward, far beyond IRELAND, where at last he discovered an unknown and inhabited country with a temperate climate and a most fertile soil. Glad of his success, he returned and spreading the fame of this new found land where they might go.

So many were those willing to accompany him that he was able to send forth ten good ships, freighted only with men, women and children, and all other materials fit for a new plantation.

Shortly after they landed in ACUZAMIL, a country in the north of America, as FRANCIS LOPEZ DE GOMARA believes; because there only, he found some remaining tracts of Christianity, a people that worshipped the Cross; but not knowing why they did it. The country where MADOK landed is perhaps YUCATAN.

1390. According to MATTHIAS QUADIUS and ANTONIUS MAGINUS, ANTONIO ZENO, a pratician of Venice, discovered in that year what we know as *Labrador*. It was then inhabited by people, who traded with *Groenland* and *Iceland*. They sowed corn and made beer. Moreover there is a tradition that they had some knowledge of the latine tongue and that several latine books were found in the library of one their kings.

AUGUST 1492. CRISTOBAL COLONUS, OR COLUMBUS, started from *Palos* (Spain) to the *Canaries Islands*, and on the 12th of September discovered *Hayti*, one of the islands of the *Antillæ*, which he called *HISPANIOLA*.

In his subsequent voyages, he discovered many of the islands known, as *Antillæ*, the *Terra firma*, or what is known now as the *Isthmus of Panama*, including *Veragua*, and the Coast of *Paria* or *PARA* (1).

(1) For more détails, see the notice on CHRISTOPHER COLUMBUS, which appeared in the preceding number of the *Humming Bird*.

MAY 1497. AMERICO VESPUCCI, sent by KING FERDINAND OF SPAIN, sailed for the *Canaries*, and from there to *Paria*, where he bartered a great store of gold from the natives, in exchange for pins, looking glasses and other trifles. He returned to Spain in November 1498.

In 1499, he undertook a second voyage and landed in some of the Islands inhabited by the Cannibals. In one of them, he met some people of high stature with whom he had to fight.

He bartered a large quantity of pearls with the natives of the Islands which he visited. In 1500, he returned to Spain and retired to *Sevilla*, with intent to settle there, but shortly after, EMANUEL, KING OF PORTUGAL, sent for him and gave him the command of three ships to discover new countries, between the *Canaries* and *Africa*.

During this voyage, he got sight of the coast of *Brazil* and discovered the *Patagonian Coast* and the *Strait of Magellan*.

His fourth expedition happened May 10th 1503. He went first to *Sierra Leone* (*Africa*), but could not land. Three degrees beyond the Equator, he discovered an Island two leagues long, and one broad, destitute of inhabitants; his best ship of six hundred tons split here against a rock. It was entirely lost, but the seamen were saved.

Three hundred leagues further on, he reached the coast of *Brazil*, and ascended the river *Curubabo* and built on its bank a strong fort in which he left twenty men. He spent five months in the building of this fort, after which he returned to *Lisbon*, with one ship laden with *Brazil wood*. The inhabitants of the City run to meet and congratulate him for his happy return.

DECEMBER 1499. VINCENT PINZON, who had been Commander of a ship under COLUMBUS, sailed with four vessels from Palos and explored about eighteen hundred miles of the *Brazilian Coast*. He returned to Spain in September 1500.

OCTOBER 1500. PEDRO ALFONSO NIÑO, encouraged by some of those that had been with COLUMBUS to the *Isles of Pearls*, rigged out a ship at his expense and sailed for the coast of *Paria*. At *Curiana*, he bartered an invaluable treasure of pearls with the natives, which he carried back to Spain with him, but, on his arrival there, he was put to prison and at last sent to the Court, where the pearls were declared free prize, because Niño had bartered for them at *Curiana*, contrary to the King's orders.

1500. Discovery of Labrador by GASPAR COTEREALIS, a Portuguese gentleman. Some authors think that SEBASTIAN

CABOT was the discoverer of this part of America about the year 1497.

What is certain is that the French landed there in 1504 and called it *Nova-Brittannia*, and built many towns there, the principal being *Sainte-Marie*, *Cap-Mars* and *Brest*.

1504-1510. Explorations of the *Darien* and part of *Columbia*, by ALFONSO FOGEDA, DIEGO NICUESA, ANCISUS and RODERICO COLMENARES. Exploration of Cuba by ALFONSO FOGEDA. He found there a king who was willing to be christened and built a church which was consecrated to the *Virgin Mary*.

1514. Expedition of PETER ARIAS to *Veragua*, *Columbia*. Discovery of the *South Sea* by VASCO NUNEZ.

1514-1519. Discovery of *Yucatan*, *Campeche*, *Tabasco* and *Vera-Cruz*, by FRANCISCO FERNANDEZ, LOBO CAIZEDO, CHRISTOBAL MORANTES, BERNARDO IGNIGUEZ and JUAN GRIFALVA.

In *Yucatan*, they found a City whose stone buildings, with stately fronts, and high turrets, had a most magnificent appearance, which FERNANDEZ called CAIRO.

They were courteously received and conducted into the City, the neatness of whose market places and exactness of their streets, they beheld with admiration as also the costly stuff garments both of men and women; but their wonder increased when they beheld many artificial *Crosses*.

On the Island of *Cozumel*, they found fair stone edifices intermixed with temples, whose steeples appeared above the houses.

GRIFALVA being led up to one of these temples by a priest, saw many spacious halls full of marble and stone images of deformed men and beasts which they religiously worshipped.

In *Tabasco*, they visited the chief City PONTENCHIANA containing above fifteen hundred houses, all built of stone, which besides their turrets and temples presented a most pleasant appearance.

On the *Island of Sacrificios*, near the actual *Vera-Cruz*, amongst many strange images, there stood a great Lion of marble seeming almost decollated with a great gash; into which wound they poured humane blood warm, which was received into a stone trough, set for that purpose underneath, then the figure of a man carved in alabaster bowing forward as if looking into the trough upon the blood. Those which were sacrificed were prisoners of war, whom bringing before their Idols, they ripping the breast open, whip out the heart with which, having smeared the lips of their Idols, they throw it into the fire, after which they feasted upon the fleshy parts, especially the cheeks.

1512. Discovery of Florida by JUAN PONCE DE LEON.

It is said that this country was discovered by SEBASTIEN CABOT, at the charges of the King of England, about the year 1497.

1519. This year was a remarkable one, as being the one during which were made the expeditions of FERDINAND MAGAGLIAN or MAGELLANE, the discoverer of the *Strait of Magellan*, and that of FERDINAND CORTES, the well known Conqueror of *Mexico*.

1525. Conquest of *Guatemala* by PEDRO DE ALVARADO.

1534. Discovery of *Nova-Scotia* and *Canada* by JACQUES QUARTIER, for the account of the French KING FRANCIS THE FIRST.

1540. Expedition of DIEGO GUTTIEREZ in *Nicaragua* and in *Columbia*, where he found a very large quantity of gold.

1541. Expeditions of PEDRO ALVARADO, FRANCISCO AND GONZALVO PIZARRO, and DIEGO de ALMAGRO.

Conquest of *Peru*.

1545. Expedition of JOHN RIBALD in *Florida*.

1576-1585. Expeditions of MARTINI FORBISHER, FRANCIS DRAKE, THOMAS CANDISH and JOHN SMITH.

In 1576, FORBISHER sailed for the northern parts of America; but in consequence of bad weather was obliged to return to England.

Several months after, he sailed again and reached *Iceland*; but excepting a few salvages which he brought to London, his voyage was of little consequence.

In 1577, FRANCIS DRAKE, also fitted by QUEEN ELISABETH, sailed from Plymouth by *Cape Verde*, along the African Coast to *Brazil*, the *Plata*, the *Strait of Magellan*, *Valparaiso*, *Arica* and *Lima*, *Panama* and *California*, returning by *Timor*, *Ternate*, *Java*, *Ceylon* and the *Cape of Good-Hope*. During all this expedition which lasted over three years, he enriched himself very much by the taking of many Spanish ships, richly laden with gold, silver and pearls.

To that part of *California* where he landed he gave the name of *NEW-ALBION*. There he was received exceedingly well by the natives, with whom he exchanged presents.

The inhabitants of that part of *America* are exceedingly hardy, for notwithstanding the cold, the men go naked, but the women wear garments of pleated rushes, which being

put about their middle, hang down to their ankles. On their stomachs hangs the ends of a hairy skin tied together, which hanging also over their shoulders cover their hinder parts.

Each house is surrounded with an earthen wall and all the corners thereof being close-stopped, and fires made in the midst of them, they are very warm rushes strowed thick on the ground, near the walls, serve them of beds. DRAKE was so satisfied with the place and its inhabitants that he made his mind to remain there for a while.

The Indians came to visit him a second time and brought him bird's feathers, store of TOBACCO, and many other gifts. DRAKE pleased with their kindness, built tents on the brow of the hill, on the top of which the Indians stood that brought the presents, whilst one of them with a loud voice made a long discourse which he had no sooner ended, but every one laid down his bow and arrows and walked unarmed down to the tents to proffer their gifts; their wives staying on the top, pinched their cheeks, and made sad lamentations, which DRAKE supposed was because they made offerings there; whereupon he also caused all his men to kneel down and say their prayers, which made the Indians to look very earnestly upon them, and to return the presents which the day before they had received from him.

The rumour of these strangers arrival spreading all over the country, made the inhabitants far and near desirous to see them, the KING himself sending Ambassadors to DRAKE to inform him that he was on his way coming to see him.

Being assured that he should be welcome, he came with a retinue of about twelve thousand men. Before walked one of a gigantic size carrying a costly scepter, on which, by three long chains made of bones, hung a great and a small crown made of feathers; next followed the KING himself in a suit of coney skins; then came a great confused company of people, each of them carrying a present; whereupon DRAKE putting his men in good order, marched to meet the KING, at which the Mace-bearer made a long preamble and when he had done, danced to the tune of a song, which he sung himself; then the KING and his whole retinue also fell a singing and dancing so long, till being weary, the KING went to DRAKE and humbly desired of him that he would accept of the Realm, assuring him that all the people should be under his obedience, which said, he put the fore mentioned Crown on his head, and hanging three double chains about his neck called him HIOLE; whereupon DRAKE took possession of the country in QUEEN ELIZABETH'S name.

Just before beaving the country, Drake caused a pillar to be set in the ground with a silver plate on the same with an inscription mentioning the day of his arrival, name and Arms of QUEEN ELIZABETH, and free delivering of that

Realm to him by the Indians. He also nailed a sixpence with the QUEEN'S EFFIGIE on the plate, under which he had his own name engraved.

1584-1585. Discovery of *Virginia* by sir WALTER RAWLEIGH, who called it so in honour of the VIRGIN QUEEN ELISABETH.

1598. Expedition by JACQUES MAHU and SIMON DE CORDES, to *la Plata* and the *Strait of Magellan*.

1600. Expedition of OLIVER VAN NOORD to the *Strait of Magellan* and *Chili*.

1609. Expedition of HENRY HUDSON. Discovery of *New-Netherland*, or *New-York*, where several dutch merchants having obtained letters patents in 1624, granted to them by the States in the Hague, established themselves there.

1614. Expedition of GEORGE VAN SPILBERGEN to the *Strait of Magellan*, *Valparaiso* and *Peru*.

1615. Expedition of WILLIAM CORNELISZON and JACOB LE-MAIRE.

Discovery of *Cape Horn*.

1623. Expedition of JACQUES L'HERMITE and GEEN HUGO SCHAPENHAM to *Tierra del Fuego*, *Peru*, *Callao*, *Guayaquil* and *Acapulco*.

1643. Expedition of HENRY BREWER to the *Strait of Magellan* and *Chili*.

Many other expeditions were sent by *Spain*, *Portugal*, *France*, *England* and *Holland*, which resulted in discoveries of interior lands and various Islands ; but these mentioned heretofore were amongst the principal ones.

POPULATION OF AMERICA
Before and after its discovery
By CHRISTOPHER COLUMBUS

According to the last censi made, the actual population of America stands as follows :

Russian Colonies in America, about	50 000
British Colonies in America.	10 000 000
French Colonies in America	50 000
Dutch Colonies in America.	50 000
Spanish Colonies in America	4 000 000
United-States of America	62 000 000
Mexico	11 500 000
Central America, Guatemala, Honduras, Salvador, Nicaragua and Costa-Rica	3 200 000
Hayti.	1 200 000
Colombia	4 000 000
Venezuela	2 300 000
Brazil.	14 000 000
Argentine Republic	4 100 000
Paraguay	400 000
Uruguay	700 000
Chili	2 800 000
Bolivia	2 300 000
Peru	2 700 000
Ecuador	1 300 000
Millions	
	126 650 000

We may say in round numbers *one hundred and twenty six millions* of inhabitants. If we take into account what BARTHOLOMEUS OF LAS CASAS write to CHARLES THE FIFTH : « that the Spaniards, in few years, on the Islands *Cuba*, *Hispaniola*, in *Honduras* and *New-Spain*, destroyed above *2.600.000* men and the slaughter that was made afterwards in *Peru*, *Brazil*, *Rio de la Plata* and other places, far exceeding the above mentioned number », we can suppose that the American Continent was well populated at the time of its discovery, and I don't think that *one hundred millions*, as the number of inhabitants at that time, is exaggerated.

This is another proof of the ancientness of AMERICA, and the resume of all what precedes is that I am fully convinced that AMERICA is a very old Continent, which probably formed part of the ATLANTIS, or at least was frequented and populated by the ATLANTES.

When the cataclysm took place, which destroyed that part of it, known as *Atlantis*, *America* was separated from the rest of the World and entirely forgotten.

Only a vague notion of its existence remained, as explained at the beginning of this notice.

Thousands of years passed, during which it may have been very partially visited by *Phenicians*, *Carthaginians*, *Egyptians* and others, including *Negroes*, but without any results of consequence to the rest of the World.

I mention the *Negroes*, because we have indisputable proofs that there were *Negroes* in *America* at the time of its discovery by *Columbus*.

In 1510, we hear that *VASQUEZ NUNEZ*, a follower of *Ancisus*, rebelled against the latter and made himself Governor of *Uraba*, or *New-Andalusia*, in which place he remained for several years. In 1515 or whereabout, hearing of the expedition of *PEDRO ARIAS*, and fearing to be deposed, he made several expeditions in the interior.

In the mountainous territory *Quarequan* supposed to contain rich gold mines, he was met valiantly by the natives armed with bows, arrows and clubs ; but frightened by the noise of their musquets they fled in all directions, but not before the fall of six hundred of them by the hands of the Spaniards and of their dogs trained for that purpose. Soon after, coming into the palace of the King of that region, he found there the King's brother dressed up in woman's apparel, which so incensed *Nuñez* that he set the dogs upon him and his attendants, which were all torn to pieces. Amongst the slain were **SEVERAL NEGROES**.

Another instance of *Negroes* inhabiting certain parts of *America*, is in the finding of *Negroes* heads, in clay of very good make, which are in my possession now. These were found several years ago in the immediate vicinity of *Guatemala*, « *Central America* », in old graves of an epoch anterior to the discovery of *America*.

About the same time, the *Tartars*, *Chinese* and *Japanese* found their way to *America* by the *Strait of Behring*, and by way of *Alaska*, penetrated to *California*, *New-Mexico*, *Mexico*, *Central-America* and *Peru*, subduing to their authority many of the ancient inhabitants, and must be considered as the founders of the Mexican and Peruvian Dynasties. It is quite possible that some sort of communications existed during many years between *America* and *Tartary*, *China* and *Japan*.

If we consider that the *Chinese* claim to have discovered the mariner's compass in the year 2634 before *CHRIST*, my reasons will appear, I hope, very plausible.

By that means, it was easy for them as for the *Japanese* to reach *America*, by *Kamschatka* and the *Strait of Behring*, as also to explore and colonize the *Pacific Coast*.

Later, on in 1007, came the discoveries of *Groenland*, *Mark-land* and *Vinland* by the *Wikings* or *Norwegians*. Although communications between these places ceased entirely in 1347, it is reasonable to suppose that the followers of *LEIF*, and other *Norwegian Navigators*, are the founders of these wonderful Cities discovered in *Colorado* and in *New-Mexico*, and that later on they reached *Mexico*, where their influence must have been felt.

Lastly appears THE ACTUAL HERO OF AMERICA, THE NOBLE AND ILLUSTRIOUS CRISTOBAL DE COLON, *Genoese* by birth, *Spanish* by choice, and *American* by fate, Discoverer of AMERICA under the guidance of the ALMIGHTY.

The time had come for that discovery to be made, and COLUMBUS was the Selected One.

Immediately after, *Spain*, *Portugal*, *France*, *England*, and *Holland* sent expeditions of discoveries, and the result was the division of this mighty Continent between them. To these countries, must be added *Russia* and the *Republic of Hayti*, representative of *AFRICA*.

The resume of all what precedes, and also from my own observations during the many years that I have travelled in that Continent, is that AMERICA is a very old Continent, probably cotemporary with ours, and that its Fauna, including Man, as well as its Flora, is peculiar to it, and consequently *American*, such being the name by which we actually know that Continent.

It was populated by the *Atlantes*, the *Egyptians* and many other nations of that epoch, thence by the *Tartarians* and the *Chinese*, and lastly by the *Europeans*.

There is also another possibility : « that the emigration did not take place from *Asia* to *America*, but the reverse, and that the *Tartarians* and *CHINESE* are the descendants of the *Americans* ». The one is just as possible as the other. I leave this investigation to the learned Americanists.

Now, we come to a very interesting point concerning the name of AMERICA.

How is it that AMERICA having been rediscovered by CHRISTOPHER COLUMBUS, as it is agreed by all, is known under the name of AMERICA instead of *Columbia*? It seems rather an anomaly!

According to the old authors the word *America* is derived from AMERICO, the christian name of VESPUCCI, a celebrated, Florentine Navigator, who took the command of four ships fitted by KING FERDINAND, sailed for *Paria* in May 1497, and made a very successful voyage.

This was two years after the discovery of that country by COLUMBUS.

In fact, neither Americo Vespucci or any other of the

Navigators of that epoch, could have made their discoveries if COLUMBUS had not given the start, by his wonderful discoveries, first of the *Antillæ*, and afterwards of the land mentioned in the old Maps as TERRA FIRMA, the actual State of *Panama* in Columbia.

BELT, in his interesting volume, the *Naturalist in Nicaragua*, London, 1874, mentions some mountains which he visited under the name of *Amerrique range*. JULES MARCOU, the celebrated Geologist, has also mentioned that name in a notice published in the *Bulletin de la Société de Géographie*, June 11th, 1875.

Lately, Mr M. PINART and others, have mentioned the name *Ameriga* and *America* as belonging to places situated in *Veragua* and in *Venezuela*; but I doubt very much that these names are anterior to the Conquest, and I have not the least doubt that the word *America* is derived as I said before from AMERICO VESPUCCI, and from no one else, and that there is no reason whatever to look anywhere for a more plausible explanation of the word. I know very well that all those who have tried to find another derivation to the word *America* have done so, with the same idea as myself, which was to restore the full credit due to *Columbus*, but we cannot help it.

Surely the Continent known by us all as *America*, ought to have been more properly called *Columbia*, derived from the name of its discoverer; but it has not been done, and it is now quite impossible and useless to change its name in that of COLUMBIA.

Now we also know that the exact spelling of COLUMBUS, was neither COLON, COLOMB or COLUMB, but COLONUS (a name elect by the way). In fact *America* is a true *Colony* for all the inhabitants of the other Continents, as I have already stated in the last number of this Journal. All the races of the World are represented there.

Are not the ways of the Providence wonderful !!

When CRISTOBAL COLONUS started in August 1492, from *Palos*, he had in his mind to discover a passage to the East Indies. Instead of that, he discovered a new Continent, and the results of his discovery have been the beginning of a new Era to the rest of the WORLD.

When we consider that only four hundred years have elapsed since, and see what *America* is already, we cannot but think that all this has not come to pass with no purpose, and I have a presentiment that before long AMERICA is designed to take a prominent place in the future destinies of MANKIND.

A. B.

Festivities in honour of CHRISTOPHER COLUMBUS

All the festivities held during the month of October in honour of CHRISTOPHER COLUMBUS, in America, Spain, Italy, France, etc., have been very successful.

In Chicago, over 200,000 Visitors assisted to the grand Ceremonies attending the Dedication of the Buildings of the Word's Columbian Exposition, and the programme was fulfilled exactly as announced, excepting that President Harrison, in consequence of the serious illness of Mrs Harrison, was not able to preside the Dedicatory Ceremonies and was represented by Vice-President Morton. About 80,000 persons figured in the various Processions. All the streets were profusely decorated with flags of all Nations.

The displays of fireworks and the illuminations were splendid, and the enthusiasm of the Visitors was immense. Cheers and Cheers were continuous during all the performances.

The festivities held in New-York were also very successful.

In Spain, their Majesties the QUEEN REGENT, WITH THE INFANT KING, opened the festival Ceremonies at Huelva, and inaugurated the monument erected to CHRISTOPHER COLUMBUS in the Convent of la RABIDA. From that place, their Majesties went to PALOS, CADIX, SEVILLA, etc.

HER MAJESTY the Queen Regent presided to the last meeting of the Congress of Americanists.

The illuminations at Huelva were splendid.

CORSICA, which, by the way, claims also to be the country where COLUMBUS was born, celebrated with enthusiasm the anniversary of the discovery of AMERICA.

High masses and religious services were celebrated in all the Catholic churches in France, Spain, Italy, Portugal, etc., and also in America. This was done at the instigation of POPE LEON XIII, who sent a letter to that effect, to all the Catholic Bishops.

The Ceremony at the Cathedral, NOTRE-DAME DE PARIS, was very imposing.

The Spanish Ambassador and suite and many other distinguished guests were present.

In CANADA, religious services were celebrated in all the Catholic churches.

Naturalists' Agency, 225, High Holborn, London, W.C.

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1 Hammer, 1 pair of For- ceps, 1 Brush, 3 Gimlets,	
etc. Complete... ... from 12/- to 40/-	
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All other utensils for Naturalists can be had at a short notice, by ordering at the NATURALISTS' AGENCY.

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„ 12 2s 3d	7s 0d	„ 11 8s 0d	10s 0d
„ 13 2s 6d	10s 0d	„ 12 9s 0d	11s 0d
<i>doz. of pairs</i>			
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Large ditto 2 " "
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Blue Creepers ten pence "
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VOL. II., N^o 42.]

DECEMBER 1892.

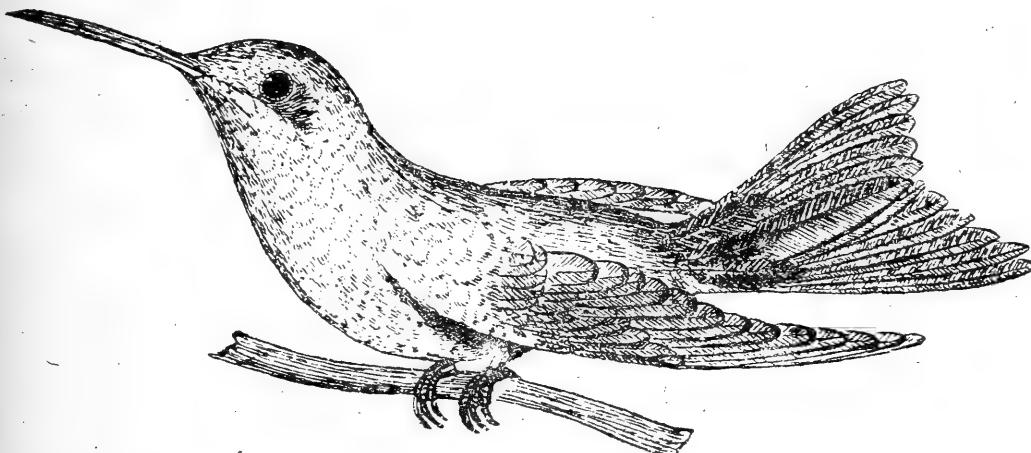
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The Humming Bird

A MONTHLY
SCIENTIFIC, ARTISTIC AND INDUSTRIAL REVIEW

EDITED BY

A. BOUCARD



Arinia Boucardi

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Villa Maria Luigia and *Villa Rondo* n° 25, the smallest, are actually let unfurnished, 3,800 francs per annum, for several years.— *Villa Rondo* n° 27, is worth 1,200 francs. When let furnished, they produce about £ 400 per annum.

All applications to be made at 225, High Holborn, London, W. C. (England), where photographies of the Villas can be seen.

NOTICE

With the present number we close the second Volume of the HUMMING BIRD, and we beg to announce that henceforth the HUMMING BIRD will be issued quarterly, the first number of volume III will be issued on the first of March, and the fourth and last one, on the first of December.

Each part will consist of 64 pages of text at least, and when possible or advisable, plates will be issued. In Volume III, besides Original Notices on Art, Science and Industry, it is the intention of our Chief Editor, Mr A. Boucard, to continue, without interruption, the publication of the Genera of Humming Birds, and to commence a relation of his Travels in AMERICA.

Mr Boucard having spent a good part of his life in that Continent, as a NATURALIST, we hope that a record of his travels and adventures in North, Central, and South America, and in Mexico, will prove of interest to the Readers of the HUMMING BIRD.

In issuing this Notice, we thank all Subscribers and Friends who have had the welfare of this Review at heart, and who have assisted in various ways in promoting its circulation, and we hope that they will continue to do so in future.

The Redaction.

LE CANAL DE PANAMA

Par A. BOUCARD

Depuis la publication de ma brochure, le SAUVETAGE DU PANAMA, juin 1892, et aussitôt l'apparition de la seconde édition parue en juillet, M. Monchicourt, le Liquidateur de la Compagnie Interocéanique du Canal de Panama, a signé un contrat avec M. Hiélard, Vice-Président de la Chambre de Commerce de Paris, par lequel celui-ci s'engageait à former, dans les trois mois, une nouvelle Société, au capital de 150 millions de francs, pour la reprise immédiate des travaux. Le lendemain de la signature du contrat, j'en étais informé.

J'en fus même assez étonné, car M. Monchicourt, dans l'entrevue que j'ai eue avec lui, en juin 1892, m'avait formellement assuré qu'il ne signerait de contrat qu'avec un Capitaliste ou une Société qui apporterait cinquante millions en espèces, *et non pas un simple engagement de former une Société.*

Mais ayant lu l'excellent article paru dans le PETIT JOURNAL

du 31 juillet, se terminant par : « *Il a dirigé l'entreprise de sauvetage quand il l'a jugé nécessaire, il rentre maintenant dans le rang, comme il convient, sans se désintéresser cependant des efforts qui seront faits. Mais il comprend que celui qui va devenir le mandataire des intéressés dans l'affaire de Panama doit avoir une entière liberté d'action. Elle lui est indispensable pour mener à bien l'œuvre immense qu'il a consenti à diriger.*

Etant à cette époque du même avis que l'auteur de cet article, j'ai fait comme le PETIT JOURNAL, je suis rentré dans le rang et je n'ai pas donné suite à mon projet d'aller à Chicago, me contentant d'envoyer gratuitement des exemplaires de ma brochure aux intéressés, y compris M. Hiélard ; mais comme voici plus de trois mois que le contrat passé entre MM. Monchicourt et Hiélard a été signé, et n'a abouti qu'aux publications du Contrat et d'un Rapport, qui ne conclut rien, je considère comme un devoir d'avertir les porteurs, que même en supposant que M. Hiélard arrive à former la fameuse Société Nouvelle, au capital de 150 millions, vu le projet préféré par MM. Monchicourt et Hiélard, elle ne peut rien sauver, et en attendant, la Liquidation est en train de faire disparaître petit à petit l'actif de l'ancienne Société. Pour peu que cela continue ainsi encore quelque temps, il ne restera plus, ni Bons à lots, ni Actions du Chemin de fer de Panama.

Il est donc temps que les intéressés prennent des mesures effectives pour défendre leurs intérêts et se fassent entendre. Mon opinion n'a pas changé. Le Canal est possible et sera rémunérateur, mais à une seule condition, celle de faire un CANAL A NIVEAU, projet Rylski, pour le percement de la Culebra, et projet Wyse Bonaparte, pour le restant. En plus il est indispensable d'obtenir le concours des anciens porteurs, et ma combinaison financière, adoptée par un très grand nombre d'entre eux, me paraît la plus facile et la plus pratique.

A. B.

Je continuerai à envoyer gratuitement ma brochure à tous les porteurs qui m'en feront la demande, en y ajoutant 10 centimes pour le port.

International exhibition at Monaco

An International Exhibition will be opened at MONACO during the months of January, February and March 1893.

This Exhibition will include all the products of Industry, Agriculture, Horticulture, Art and Sciences.

The local Committee is presided by the Mayor of Monaco.

The prizes will consist of honorific Diplomas of five distinct Categories, Grand Prize, Gold, Silver, Silver gilt, and Bronze Medals.

A new emission of Postage stamps

In memory of CHRISTOPHER COLUMBUS, the Government of the United-States of America has decided to issue a new series of Postage stamps.

On one of them, will be represented the portrait of the celebrated Navigator, on another, the Convent of la RABIDA, and on a third, the famous Pinnace, the SANTA-MARIA.

This issue will be in use from the first of January, to 31th of December 1893 only.

It is certain that with the actual predominant increasing infatuation for stamps collecting, many millions of these stamps will find a resting place in the album of Stamps Collectors.

Review of new publications

1891. — ATLAS DES CHAMPIGNONS COMESTIBLES ET VÉNÉNEUX, by L. Dufour. Paris, 1 volume in-8, 80 pages of text, and 80 coloured plates. — Price : 12 shillings.

It is excessively good, and the plates are very well done.
« Can be procured by Naturalist's Agency. »

1891. — FREMDE EIER IM NEST, ein Beitrag zur biologie der vogel, by von Paul Leverkühn, Munich. Pamphlet in-8, 212 pages of text.

An interesting work for Ornithologists and Oologists.

1891. — MEMORIA DE LA SECRETARIA DE GOBERNACION, POLICIA Y FOMENTO. Republica de Costa-Rica, San-José.

Interesting work for Americanists.

1891. — TWENTY-SECOND ANNUAL REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO. Toronto. Pamphlet in-8, 101 pages of text, and wood cuts. It contains many interesting notes on injurious Insects.

1890-1891. — ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION. Washington. U. A.

Three large Volumes with a large number of plates, containing : *Reports of the Society*, *the National Scientific Institution at Berlin*, *Hertz's Researches on electrical waves*, *Progress of Meteorology in 1889*, *How rain is formed*, *On the movements of the earth crust.*, *Progress of Anthropology in 1889 and 1890*, *the Museums of the future*, *Te-Pito Te Henua or Easter Island*, *Animals recently extinct*, *Explorations in Newfoundland and Labrador*, *Bibliography of the United States National Museum*, *the Squaring of the Circle*, *Glacial Geology*, *Stanley and the Map of Africa*, *A tropical Botanical Garden*, *the Ascent of Man*, and many other valuable papers.

1891. — NORTH AMERICAN FAUNA, by Doctor C. Hart Merriam. N° 5, Washington. U. A. This part contains 120 pages

of text, and one coloured plate figuring a new species of Owl, *Megascops fflammeolus idahoensis*. It is exclusively dedicated to the fauna of Idaho U. A., and contains the descriptions of several new species of Mammals and Birds.

1891. — CATALOGUE OF BIRDS IN THE BRITISH MUSEUM, Vol. XX. PSITTACI, by T. Salvadori. London 1891. — Price : 30 shillings.

This Volume prepared by the well known Italian Ornithologist, Count Salvadori, is an excellent work, and will be of great use to all Scientists. All the species known, up to date, are concisely described. Fourteen new species are described. They are : *Eos challengerii*, *Neopsittacus rubripileum*, *Conurus callogenys*, *Pyrrhura emma*, and *berlepschi*, *Psittacula flaves-cens*, *Chrysotis virenticeps*, *inornata*, and *Salvini*, *Urochroma emma*, *Geoffroyus floresianus*, and *sumbavensis Ptistes*, *vetterensis*, and *Bolbopsittacus intermedius*.

Four new Genera are also described : *Hypocharmosyna* for *Trichoglossus wilhelminæ*, Meyer, and others, *Conuropsis* for *Conurus carolinensis*; *Neophema* for the group *Euphema* and *Bolbopsittacus* with *Cyclopsittacus lunulatus* for its type. The following species are figured : *Pyrrhura emma*, *berlepschi*, *rupicola*, and *rhodocephala*, *Myopsittacus luchsi*, *Bolborhynchus andicola*, *Psittacula sclateri*, *Chrysotis diademata*, *salvini*, and *chloronota*, *Pionopsittacus pyrrhops*, *Tanignathus everetti*, and *burbidgei*, *Palæornis finschi*, *Bolbop-sittacus intermedius*, *Loriculus amabilis* and *quadricolor*, *Platycercus xanthogenys*, *Cyanoramphus subflavescens* and *cyanurus*.

1892. — CATALOGUE OF BIRDS IN THE BRITISH MUSEUM, Vol. XVI. UPUPÆ AND TROCHILI, by Osbert Salvin, CORACIÆ, CYPSE-LIDÆ, CAPRIMULGIDÆ, PODARGIDÆ, and STEATORNITHIDÆ, by Ernst Hartert. London. — Price : 36 shillings.

This Volume contains 704 pages of text, and 14 coloured plates representing : *UPUPA SOMALENSIS*, *IRRISOR BOLLII*, and *JACK-SONI*, *SCOPELUS CASTANEICEPS*, *PANYCHLORA MICANS*, *CHIRO-STILBON PERUANUS*, *HELIANGELUS LATICLAVIUS*, AND *VIOLICOLLIS HELIOTRYPHA SPECIOSA*, AND *BARRALI*, *AGYRTRIA CÆRULICEPS*, *AMA-ZILLA SUMICLRASTI*, *IOLÆMA LUMINOSA*, *PHÆLOÆMA CERVINIGULARIS*, *ERIOCNEMIS DYESLIUS*, AND *VENTRALIS*, *CHAETURA USCHERI*, *CAPRI-MULGUS GRISEATUS*, AND *WHITELYI*, *LYCORNIS MINDANENSIS*, and lastly *BATRACHOSTOMUS HARTERTI*.

Since a long time, I was expecting the publication of this Volume, in consequence of my own work, the GENERA OF HUMMING BIRDS, which publication I began in the January number of the Humming Bird, Vol. II, and which I stopped in July ; because I wanted to study with great care, the part on TROCHILI, prepared by the eminent Ornithologist Mr OSBERT SALVIN.

Since August last, when I received it, I have done so, during

all my leisure time, and I have come to the conclusion that Mr OSBERT SALVIN has produced a remarkable work which will facilitate immensely the study of these charming birds; but I am sorry to see that he has not supported my proposition of a new Order for them, but has only proposed a sub-Order.

Nevertheless I am satisfied so far, the gap between the two, being rather a slight one, and I have no doubt that before long, my proposition of the ORDER TROCHILI, will be accepted by all eminent Ornithologists.

The classification proposed by Mr Salvin of TROCHILI SERI-ROSTRES, TROCHILI INTERMEDIIS, and TROCHILI LÆVIROSTRES, is very attractive, and already in 1888, Mr EUGENE SIMON, of Paris, and myself, we had established the basis of a classification on these characters; but we gave it up as not quite satisfactory. Lately, with the hope of making my profit of the most recent attempts at classification of these birds, forming Genera, I have gone to the trouble to reclassify all my Collection according to the classification proposed by Mr Salvin; but it has not been so satisfactory as I thought, and I have come to the conclusion that the said characters are not important enough, to base a classification upon. I consider them only as accessories characters, not equivalent to those of the general facies, wings, tail and bill.

I consider even the characters of the tail as more important than those of dentition; but a really good classification cannot be made without taking in consideration all the above mentioned characters.

I consider the dentition only as an additional character enabling the species which possess it to feed on insects of a larger size than the others, and to grind them with, so as to be more easily digested.

I am also sorry that Mr OSBERT SALVIN did not mention, when possible, the names of the discoverers of species. For example, PHAEOPTILA SORDIDA, page 63, CYANOMYIA VIOLICEPS, p. 196, and CALOTHORAX PULCHRA, p. 391, three well known species, discovered by me, in the Department of Oaxaca, Mexico, in 1857, are only mentioned as Oaxaca, Mexico, Sallé, for the first two, and Mexico, Boucard, for the last one. It should be for all of them, Oaxaca, Mexico, Boucard.

The same thing has been done in the BIOLOGIA CENTRALI AMERICANA, with all the species of Insects discovered by me, in Tuxtla, Playa Vicente, Oaxaca, Juquila, etc., to which the name of my friend Sallé is attached. Excepting the species collected in Vera-Cruz, Cordoba, Orizaba and San-Andres Chalchicomula, which we explored conjointly, all the others were collected in countries, where my friend Sallé has never been.

Lastly, I see that Mr Osbert Salvin mentions several spe-

cies as unknown to him : C. GIGLIOLI, p. 113; EUGENES VIRIDI-CEPS, p. 302; OXYPOGON STUEBELI, p. 336; ERIOCNEMIS AUREA, p. 367; CHÆTOERCUS BERLEPSCHI, p. 414, and several others. If Mr Salvin had asked the loan of these specimens, I have no doubt that Messrs Meyer, Simon and myself would have communicated the types to him. For my part, I shall always be glad to show my types, to Authors of Monographs.

1892. — CATALOGUE of BIRDS IN THE BRITISH MUSEUM, Vol. XVII. CORACIÆ (contin) and HALCYONES, with the families LEPTOSOMATIDÆ, CORACIIDÆ, MEROPIDÆ, ALCEDINIDÆ, MOMOTIDÆ, TOLIDÆ, and COLIIDÆ, by R. Bowdler Sharpe; BUCEROTES and TROGNES, by W. R. Ogilvie Grant. London. Price : 30 shillings.

This Volume contains 522 pages of text, and 16 coloured plates, illustrating the heads of DICROERCUS HIRUNDINACEUS and FURCATUS, MELITOPHAGUS CYANOSTICTUS, MERIDIONALIS and PUSILLUS, full plates of EURYSTOMUS ORIENTALIS, CALONYX, SOLOMONENSIS and AZUREUS, ALCEDO QUADRIBRACHYS and GUENTHERI, CERYLE ÆQUATORIALIS and STICTOPTERA, heads of HALCYON TORQUATUS, FORBESI, MALIMBICUS, ARMSTRONGI, SOLOMONENSIS and CHLORIS, in full, HALCYON HUMII, MOMOTUS BARTLETTI, SUBRUFESCENS, MICROSTEPHANUS and ÆQUATORIALIS, COLIUS LEUCOTIS and AFFINIS, LOPHOCEROS JACKSONI and DAMARENSIS, TROGON BOLIVIANUS, HAPALODERMA VITTATUM, and Harpactes DULITENSIS.

This Volume, and the formers are excellent, and maintain the high reputation acquired by the works published by order of the Trustees of the British Museum, for the benefit of Ornithologists.

1892. — ZOOLOGICAL RECORD, Vol. XXVIII. London, 1891. Edited by Doctor Sharp.

GENERAL SUBJECTS, by J. Arthur Thomson, 28 pages.

MAMMALIA, by Lydekker, 58 pages.

AVES, by R. Bowdler Sharpe, 69 pages.

REPTILIA AND BATRACHIA, by G. A. Boulenger, 24 pages.

PISCES, by G. A. Boulenger, 41 pages.

TUNICATA, by Professor W. A. Herdman, 6 pages.

MOLLUSCA, by B. B. Woodward, 114 pages.

BRACHIOPODA, by B. B. Woodward, 7 pages.

POLYZOA, by B. B. Woodward, 7 pages.

CRUSTACEA, by Cecil Warburton, 24 pages.

ARACHNIDA, by R. Innes Pocock, 26 pages.

MYRIAPODA AND PROTRACHETA, by R. Innes Pocock, 6 pages.

INSECTA, by Dr. Sharp, 311 pages.

ECHINODERMATA, by E. A. Minchin, 91 pages.

VERMES, by Arthur Willey, 50 pages.

COELENTERATA, by Sydney J. Hickson, 14 pages.

SPONGIÆ, by E. A. Minchin, 33 pages.

PROTOZOA, by Cecil Warburton, 13 pages.

This remarkable Volume is quite indispensable to Zoologists.

1892. — PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON. Parts I, II and III. — Price : 12 shillings each.

Part I, contains 172 pages of text, 10 black and coloured plates, and many wood-cuts. Several new species of *Tunisian Reptiles*, *Coleoptera from Borneo*, Head of a new antelope, *BUBALIS SWAGNEI*, from Somali-land, and *LEPIDOPTERA* from *SANDAKAN*, are figured.

Part II, contains 136 pages of text, 13 black and coloured plates, and many wood-cuts ; several new species of *OPHIUROIDS*, Head of *ORIX CALLOTIS*, new species from Mount Kilimanjaro ; *ORTHOPTERA* of the ISLAND OF *SAINT-VINCENT* ; *HEMIGALE HOSEI* ; *AMAUROCICHLA BOCAGII* and *MOHONEYANUS* ; *LAND SHELLS* of *SAINT-HELENA*, AND FROM *COLOMBIA*, are figured. Among the various works published in this part is one by Hans Gadow M. A. etc. entitled : « ON THE CLASSIFICATION OF BIRDS, which will be of much use to Ornithologists.

This new classification of birds by M. Hans Gadow is based on the anatomical structure of birds, and the result is the following :

I. *Subclass.* — *ARCHORNITHES*, which includes the Order *ARCHÆOPTERYGIFORMES*.

II. *Subclass.* — *NEORNITHES*, which he divides in *NEORNITHES RATITÆ*, and *NEORNITHES CARINATÆ*.

In the first division, he includes : *STRUTHIONES*, *RHEÆ*, *CASUARII*, *APTRYGES*, *DINORNITHES*, and *ÆPYORNITHES*.

In the second division, he includes all the rest as follows : *COLYMBIFORMES*, *SPHENISCIFORMES*, *PROCELLARIIFORMES*, *ARDEIFORMES*, *FALCONIFORMES*, *ANSERIFORMES*, *CRYPTURIFORMES*, *GALLIFORMES*, *GRUIFORMES*, *CHARADRIIFORMES*, *COLUMBIFORMES*, *CUCULIFORMES*, *CORACIFORMES*, and *PASSERIFORMES*.

Part III, contains 232 pages of text, 8 black and coloured plates, and some wood-cuts. Several new species of *Indian frogs*, *Lycænidæ* from South Pacific, new Frogs from Borneo, and *Lucioperca marina*, are figured.

In the Birds from Peru, by Messrs Hans von Berlepsch and Jean Stolzmann, five new species are described : *Pyranga testacea tschudii*, *Saltator immaculatus*, *Dives kalinowskii*, *Pyrocephalus rubineus heterurus*, and *Cinclodes taczanowskii*.

1892. — TRANSACTIONS OF THE ZOOLOGICAL SOCIETY OF LONDON, Vol. XIII. Part 4, London. Price : 6 shillings.

Contents. — *On a skull of TROGONOTHERIUM CUVIERI from the forest bed of East Runston, near Cromer*, by G.-T. Newton, 11 pages of text, and one plate.

1892. — *THE Ibis*, SIXTH SERIES, Vol. IV, Numbers 13 to 16. 1892, London. — Price : six shillings each part. Edited by Dr Philip Lutley Sclater.

This Volume maintains the high reputation acquired by

this publication. It is quite indispensable to Ornithologists.

Number 13 contains : *List of the birds of Heligoland*, by Henry Seebohm; *Genera Francolinus and Pternistes*, by W.-R. Ogilvie Grant. One new species is described : *Francolinus uluensis*. The name of *Francolinus Sharpii* is proposed for the Abyssinian bird in place of *F. rupelli*, Gray, which is a synonym of *F. clappertoni*. Children; *Francolinus jacksoni*, Grant, *Ibis* 1891, is figured; *Birds of British India*, by W.-E. Brooks; *Description of a new species of Wren from North East India*, by E.-C. Stewart Baker; *Elachura haplonota* described and figured with *Elachura punctata*; *On the Indian Museum and its collection of Birds*, by W.-L. Sclater, a list of the type specimens of Birds in the Indian Museum, Calcutta, is given. *On the Birds of Tsu-sima Japan*, by Henry Seebohm; *On the Birds of Madagascar*, by the Rev. James Sibree; *On the Avifauna of the Lower Pilcomayo*, by J. Graham Kerr, *Celeus kerri*, Berlepsch, J. F. O. 1887, p. 22, is figured; *On Birds collected in East Africa*, by M. Jackson, by Dr Bowdler Sharpe; *Cisticola chubbi*, and *Camaroptera griseigula*, new species are described; *Apalis pulchra*, Sharpe. *Ibis* 1891, p. 119, and *Dryodromas jacksoni*, Sharpe. *Ibis* 1891, p. 119, are figured, etc.

Number 14 contains : *On the Birds of the Estancia Espartilla, Argentine Republic*, by A.-H. Holland; *On the Ornithology of the Gambia*, by Percy Rendall; *On Birds collected in Corea*, by C.-W. Campbell. *Suthora fulvicauda* and *longicauda*, new species, are described; *Birds of Madagascar*, by Rev. J. Sibree, continued; *On the Caprimulgidae*, by E. Hartert. *Caprimulgus eximus*, figured; *On two small Collections of Birds from Bugotu and Florida*, by H. B. Tristram. *Graucalus nigrifrons* and *welchmani*, new species, are described; *On Birds collected in East Africa*, by Dr Bowdler Sharpe, continued. *Platystira jacksoni*, *Melittophagus oreobates*, new species, are described and figured as also. *Trochocercus albonotatus*, Sharpe, *Ibis* 1891, p. 121; *Descriptions of new species of Birds discovered by M. C. Hose on Mount Dulit, in N. W. Borneo*, by Dr Bowdler Sharpe. *Batrachostomus harterti*, *Zosterops squamifrons*, *Geocichla everetti* and *Mesobucco eximus*, new species, are described; *On a Collection of Birds from Central Nicaragua*, by Osbert Salvin and F. Du Cane Godman. *Delattria sybillæ*, new species, is described, etc.

Number 15 contains : *On the Birds of East Prussia*, by Ernst Hartert; *On a new species of Flycatcher of the genus Hyliota*, by Dr G. Hartlaub. *Hyliota nehrkorni*, new species, is described and figured; *On the Genera Bambusicola and Arboricola*, by W.-R. Ogilvie Grant. *Arboricola gingica*, Sonnerat, figured; *On the Birds of Foochow and Swatow*, by John D. de la Touche; *On Birds from Mount Dulit, N. W.*

Borneo, by Dr Bowdler Sharpe, continued. *Calyptomena hosii* Sharpe, Ann. and Mag. Nat. Hist. 1892, p. 249, and *Mesobucco eximius*, Sharpe, Ibis 1892, p. 324. are figured.

Number 16 contains: *On the Birds of Foochow and Swatow*, by M. J.-D. de la Touche. continued, *Galtinula coccineires*, Selater, Ibis 1891, p. 44, figured; *On the Birds of East Prussia*, by E. Hartert continued; *On a little known species of Lark of the Genus Otocorys*, by Ernst Hartert, *Otycoris berlepschi*, Hartert, J. f. O. 1890, p. 103, figured; *On some extinct Birds of Queensland*, by M. R. Lydekker; *On Birds collected in East Africa*, by Dr Bowdler Sharpe, concluded. *Francolinus gedgii*, Ogilv. Grant, Ibis 1791, p. 124; 1892, p. 47, figured.

This volume contains also an excellent critical review, by the Editor Dr Philip Lutley Selater, on all the most important Ornithological works published in 1891, and early part of 1892.

1892. — MÉMOIRES DE LA SOCIÉTÉ ZOOLOGIQUE DE FRANCE. Tome V, 1^{re}, 2^e, 3^e et 4^e parties. Paris.

Contents. — *Congrès ornithologique international: Eponges de la Mer Rouge*, by M. Emile Topsent; *Catalogue des Reptiles, Batraciens et Poissons du département de l'Indre*, par MM. René Martin et Raymond Rollinat; *Description de la Glossiphonia tessellata*, by Dr Raphaël Blanchard; *Nouvelle espèce de Cochenille du dattier du Sahara*, by Ad. Targioni Tozzetti; *Paguriens de la Melita*, by Messrs Ed. Chevreux and E.-L. Bouvier; *Unionidæ de Bornéo*, by Messrs Drouet and Chaper; *Faune herpétologique de Bornéo*, by Dr F. Mocquard; *Cladocères nouveaux du Congo*, by Jules Richard;

Lépidoptères de la Côte de Malabar et de Ceylan, by Charles Oberthür; *Les oiseaux hybrides rencontrés à l'état sauvage*, by André Suchetet; *Cladocères et Copépodes d'eau douce*, by MM. Jules de Guerne et Jules Richard; *Description de la XEROBDELLA LECOMTEI*, by Dr Raphael Blanchard; *Descriptions de Diptères nouveaux*, by J.-M.-F. Bigot, etc.

1892. — MEMORIAS Y REVISTA DE LA SOCIEDAD CIENTIFICA ANTONIO ALZATE, Mexico. All what has been published of Vol. V. It contains many excellent papers, among which I call the attention of Zoologists to the one entitled: *RESENA DE UNA EXCURSION A LA CAVERNA DE CACAHUAMILPA Y A LA GRUTA. CARLOS PACHEO*, by Ing. Guillermo B. y Puga.

Several new or rare species which were collected are described and figured. Among the plants, *Breweria Mexicana*, *Var. floribunda*, Villada.

In Mammals, two species of bats. *MORMOPS MEGALOPHYLLA* and *CHILONYCTERIS RUBIGINOSA*.

In Shells, *SPIRAXIS CACAHUAMILPENSIS*, sp. n.

In Coleoptera, only one specimen of *CHOLEVA CACAHUAMIL-*

PENSIS, in Diptera ; PHOLEOMYA CACAHUAMILPENSIS, in Orthoptera ; PHALANGOPSIS, POLYPHAGA and LEPISMA CACAHUAMILPENSIS.

In Arachnida, PHRYNUS, DRASSUS, PHOLCUS and SCUTIGERA CACAHUAMILPENSIS.

In Crustacea, ARMADILLO CACAHUAMILPENSIS and PORCELLIO MEXICANUS.

1892. — ACTES DE LA SOCIÉTÉ SCIENTIFIQUE DU CHILI, tome I, large in-4, 119 pages of text.

This Volume contains the Rules of the Society, List of Members, Reports of Meetings, and various scientific papers contributed by Members, among which : the LIZARDS of CHILI, by Mr *Ferdinand Lataste* ; GENÈSE DE L'OR, by Mr A.-F. Nogues ; EXPLORATION OF SIPOTURA, by Philibert Germain ; ENTOMOLOGIA CHILENA, by Edwin Reed ; RATS OF CHILI, by F. Lataste, etc. ; Mr FERDINAND LATASTE, with several friends, were the promoters of this new Scientific Society, to which we wish the success it deserves.

1892. — THE ENTOMOLOGIST'S MONTHLY MAGAZINE, edited by Messrs Barret. Fowler, Champion, Mc Lachlan, Douglas, Saunders and Stainton. Second Series, Vol. III. London, 1892. — Price : sixpence, each part.

This interesting volume contains a large number of contributions, chiefly on British Insects.

Other publications received

1892. — EVERYBODY'S POCKET CYCLOPÆDIA, by Don Lemon, London. — Price : sixpence. A very interesting book containing most valuable informations of all descriptions. No one should be without it.

ORNITHOLOGIST AND OOLOGIST, by Frank Webster, Hy de Park, Mass. U. A.

The KANSAS CITY SCIENTIST, Official organ of the Kansas City Academy of Science, Kansas City. U. A.

The CANADIAN ENTOMOLOGIST, Vol. XXIV, edited by Rev. G. J. S. Bethume. Port-Hope, Ontario, Canada.

The ANTIGUA OBSERVER, Vol. XLVII, edited by Daniel W. Scarville, City of Saint-John, Antigua.

EL PORVENIR, Ano XV, edited by Antonio Araujo. L. Carthagena, Colombia.

LA VOZ, Ano VIII, edited by J.-G. Abello. Santa-Marta, Republica de Colombia.

The WORLD, New-York. U. A. Pages 37 to 44 are exclusively dedicated to the Republic of Mexico. It gives a glowing account of the actual condition of that country.

MISCELLANEA ENTOMOLOGICA. Organe international, edited by Prof. E. Barthe, Montélimar, France.

FEUILLE DES JEUNES NATURALISTES, edited by M. Adrien Dolfus. Vingt-deuxième année. Paris, 1892.

MEMORIA QUE LA SECRETARIA DE FOMENTO DE LA REPUBLICA DE GUATEMALA PRESENTA A LA ASSEMBLEA LEGISLATIVA EN SUS SESSIONES ORDINARIAS DE 1892. Guatemala, 1892.

RECOMPENSAS OBTENIDAS POR LA REPUBLICA DE GUATEMALA EN LA EXPOSICION UNIVERSAL DE PARIS, 1889. Guatemala.

BULLETIN OF THE UNITED-STATES NATIONAL MUSEUM, N° 21. Washington.

The SPORTING GOODS REVIEW. London, 1892.

LA NUOVA CITTÀ AMERICA ED IL R. PRINZAPULKA NEL NICARAGUA, by *Désiré Pector*. Estratto dal « *Cosmos di Guido Cora* », Vol. X, 1889-1891.

EXPOSÉ SOMMAIRE DES VOYAGES ET TRAVAUX GÉOGRAPHIQUES AU NICARAGUA DANS LE COURS DU XIX^e SIÈCLE, par *Désiré Pector*, « *Annales Economiques* ». Paris, 1891.

APERÇU DES PRINCIPALES COMMUNICATIONS RELATIVES A LA LINGUISTIQUE FAITES AU CONGRÈS INTERNATIONAL DES AMÉRICANISTES, 1890, par *Désiré Pector*, « *Revue Linguistique* ». Paris, 1890.

JOSÉ TRIANA, NOTICE HISTORIQUE, par *Désiré Pector*. « *Archives de la Société Américaine de France* ». Paris, 1892, etc., etc.

OBITUARY

1891. — September 2^d, AUGUST EDLER VON PELZEN died in Vienna, aged 66. — AUGUST EDLER VON PELZEN was born at Prague on the 10th of March 1825. Since his earlier youth, he was devoted to Natural History. First he studied Law and practised in the Vienna Courts. In the beginning of 1851, he obtained the place of Assistant to Doctor C. Diesing, with whom he remained until the death of the Doctor, in 1867.

In 1869, he was appointed Custos of the Ornithological and Mammalogical Collections, which had been under his care since 1852.

His principal works are : *ZUR ORNITHOLOGIE BRASILIENS* published in 1871. *BIRDS OF THE NOVARA EXPEDITION*, and his *ORNIS, VINDOLEONENSIS*. His other memoirs were published in various scientific journals.

He was a learned and modest man, highly appreciated by those who knew him.

1891. — December 6th, DOM PEDRO D'ALCANTARA, THE LATE EMPEROR OF BRAZIL, died in Paris, at the early age of 66. — DOM PEDRO was born the 2^d of December 1825. He was only six years old when his father abdicated in his favour. In 1840, he was crowned EMPEROR.

Since that date, he reigned peacefully, and Brazil did progress immensely during that time.

To him is due the abolition of slavery in Brazil. He was a learned Scientist, and to the last, he showed a great interest in Zoology and Geography.

A few days before his death, he assisted to the meeting of the French Institute, to which scientific body, he belonged as Foreign Member. Very often he presided the meetings, of the Geographical Society of Paris, and it is not long ago that he came to London, and visited the Royal Geographical Society. M. H.-W. Bates, who was then the Assistant Secretary, had the honour to attend him. Although Dom Pedro was a very liberal monarch, a revolution resulting in the proclamation of the Republic in Brazil, took place the 15th of November 1890, and he was obliged to abdicate and leave the country with all his family. He came to France and resided alternately on the Riviera, or in Paris.

Shortly after his arrival in France, he lost his wife, the Empress.

1891. — December 7th, M. ALPHAND, Director of the public works of Paris, died aged 74. He succumbed to cerebral congestion complicated with palsy. M. ALPHAND was born the 26th October 1817, and was a well known figure in Paris. It is him who had the direction of the parks and promenades. He had been selected for that post by the celebrated BARON HAUSSMANN. All those who have visited the International Exhibitions of 1867, 1878 and 1889 will remember how he transformed the TROCADERO and CHAMP DE MARS in delightful gardens, the admiration of all the Visitors. In 1889, he was appointed General Director of the Works of the Exhibition, and he surpassed himself. It was a real pleasure to see him on the grounds. By his activity and talents, he contributed immensely to the success of the Exhibition. His nomination as GRAND CORDON DE LA LÉGION D'HONNEUR, was the reward of his efforts. He was a KNIGHT of the same Order since 1882.

1891. — December 22^d, MGR FREPPEL, *Bishop of Angers*, died in that town, aged 64. — CHARLES-EMILE FREPPEL was born at Obernay (Bas-Rhin) the first of July 1827. He made his studies at the Seminary of Strassburg. He was appointed Professor of Theology at the Sorbonne somewhere in 1854, and occupied that chair up to 1870. In 1868, he was nominated *Chevalier de la Légion d'honneur*. In 1870, he was promoted Bishop of Angers. In 1880, he was elected Deputy for the Department of Finistère, which he represented up to the time of his death.

In the Legislative Chamber, he was a prominent member and delivered not less than 120 discourses on several subjects ; but chiefly against the laicisation of schools, and such like. He was the author of twenty-eight volumes treating of religious matters.

1892. — January 12th, ARMAND DE QUATREFAGES DE BRÉAU, Member of the French Institute, Professor in the Paris Museum, died in Paris aged 82. He succumbed suddenly without any apparent suffering. — ARMAND DE QUATREFAGES was born at Berthezène, a small village in the Cévennes (Hérault), France, on the 10th of February 1810. He was first educated by a young pastor. Later on, he went to the college of Tournon, where he was remarked and befriended by his professor, Mr Sornin, who took him at Strassburg, where he was appointed Professor of Astronomy to the Faculty of Sciences. During his stay in Strassburg he studied mathematics, and at the early age of nineteen, he conquered his diploma of Doctor in Mathematics. In 1832, he passed successfully his examinations as a Doctor in Medicine, after which he retired in Toulouse amongst his family. During his stay in that town, he edited the *Journal de médecine et de chirurgie*. But the study of Natural Sciences had a great attraction for him, and he soon abandoned his career as a Doctor, and accepted the modest employment of Professor of Zoology in the Faculty of Sciences. With the very small credit of 90 francs monthly, he created there a small Museum, but his ambition was to come to Paris, and after some difficulty, his family consented to his departure. When in Paris, he made the acquaintance of Messrs Agassiz, Vogt, Milne-Edwards, and other Scientists. Since 1840, when he obtained his Diploma of Doctor in Natural Sciences, up to his last day, he worked constantly, and his fame increased. In 1852, he was elected *Member of the Academy of Sciences*, and three years after he was nominated Professor of Anthropology in the Paris Museum, where he professed to the last. His works are too numerous to mention in this brief notice; but I will just mention the *SOUVENIRS D'UN NATURALISTE*, in which he describes in a charming manner, his stays on the shores of the Atlantic and Mediterranean Seas, studying the inferior animals, and the fine works which he published on the nature and origin of MAN.

Armand de Quatrefages is the Creator of the fine anthropological Collection in the Paris Museum, which is considered the best one in Europe. He was very amiable and modest, and it is a great loss for Science.

1892. — January 14th, DUKE OF CLARENCE, THE ELDEST SON OF PRINCE OF WALES, died in London at the early age of 28. He succumbed from a severe attack of influenza, after a few days illness. — THE DUKE OF CLARENCE was born the 8th of January 1864. Science had a great attraction for him. His loss so unexpected and at such a time, on the eve of his marriage, was deeply felt by the reigning family, by all England, and by the World at large.

Numerous messages of sympathy and condolance were

sent from all parts to Her Majesty the Queen, and to their Royal Highnesses, Prince and Princess of Wales.

He was temporally buried at Windsor, on the 20th of January. Business was entirely stopped in London during the day of the funeral, and tokens of mourning were conspicuous everyhere.

Religious Ceremonies were celebrated in Paris, in all the European Capitals, and in many other places.

1892. — February 16th, HENRY WALTER BATES, Traveller Naturalist, Fellow of the Royal Society, Assistant Secretary of the Geographical Society, etc., died in London, aged 67 (See *Humming Bird*, Vol. II, p.p. 24-26).

1892. — March 7th, ETIENNE ARAGO, Keeper of the Luxembourg Museum, died in Paris, aged 89, after an illness which kept him three months in bed. — He was brother of the illustrious astronomer FRANCOIS ARAGO. Both were born at Estagel (Pyrénées-Orientales). First he studied chimistry, but soon left it for literature. About one hundred of his plays were represented in various theatres. He has also published a very interesting work, *l'HOTEL DE VILLE DE PARIS AU 4 SEPTEMBRE ET PENDANT LE SIÈGE*. In February 1871, he was elected Deputy for the Department of Pyrénées-Orientales; but he soon resigned to resume his literary works.

1892. — May 2^d, HERMANN-CHARLES BURMEISTER, Ex-Director of the National Museum of Buenos-Ayres, Argentine Republic, died at Buenos-Ayres, at the age of 85, from the result of an accident. — HERMANN-CHARLES-CONRAD BURMEISTER was born at Stralsund in 1817. Whilst a student of Medicine at Halle, he studied Zoology under Nitsch, and took his degree of Doctor in Philosophy in 1829. In 1842, he succeeded Nitsch to the Chair of Zoology at Halle, and continued there till 1848; but long before that he had become well known by his writings, especially on Entomology. His *HANDBUCH DER ENTOMOLOGIE*, which he began in 1832, and finished in 1847, is with the *History of Creation*, 1843, amongst his most important works. About 1850, he went to Brazil where he spent two years collecting. Later on, he returned to South America, and became Director of the National Museum of Buenos-Ayres, which post he occupied until shortly before his death.

In 1861, he published his *REISE DURCH DIE LA PLATA STAATEN*, in two volumes, the second of which is devoted to a *SYNOPSIS OF THE VERTEBRATES OF THE ARGENTINE REPUBLIC*. He also published in the « *Analos del Museo publico de Buenos-Ayres* », some very interesting notes on the wonderful Mammals of the Argentine tertiaries.

Doctor Carlos Berg, his former Assistant, has succeeded him in the Directorship of the Museum.

1892. — May 14th, DOCTOR CARL-AUGUST DOHRN, died at Stettin, aged 86. He succumbed from the results of an attack of influenza. — Carl-August Dohrn, the Veteran Entomologist of world reknown, was born on the 27th of June 1806. During his life, he corresponded with all the principal Entomologists of the World, and formed a very fine and valuable Collection of Coleoptera. He was President of the Entomological Society of Stettin from 1843 to 1887, in which year he retired, and was succeeded by his eldest son, Dr Heinrich Dohrn. His younger son is the well known Dr Anton Dohrn, the founder of the Zoological Aquarium at Naples.

He edited the ENTOMOL ZEITUNG, the organ of the Stettin Society, during many years, and many of his memoirs, and descriptions of new species of Coleoptera, were published in that Journal.

1892. — August 23^d, MARSHAL DA FONSECA, First President of the Republic of Brazil, died at Rio-Janeiro. He was appointed President on the 25th of February 1891 ; but resigned the post in 1892. He was the principal instigator of the Revolution, 15th November 1889, which caused the fall of Dom Pedro.

1892. — October 2^d, ERNEST RENAN, Professor at the Collège de France, died in Paris, aged 68. He succumbed from bronchitis, after a very short illness and without much suffering. — ERNEST RENAN was born in 1823, at *Treguier*, Brittany. He first studied in his native town, next in Paris in the Seminary of Saint-Nicolas du Chardonneret, then directed by the abbot *Dupanloup*, raised afterwards to the dignity of Bishop of Orléans.

Three years after, he went to Issy, a succursal of Saint-Sulpice. When there, he felt for the first time that he had lost faith in his first vocation to be a priest. So he resolved to leave the seminary, which he did shortly after.

Being poor, he made his living by giving lessons ; but at the same time he continued his studies on Philology, and conquered all his universitary degrees, including that of Philosophy. In 1856, his reputation as a Philologer was established, and the Academy of Inscriptions and Belles-Lettres gave him the succession of Augustin Thierry.

In 1862, he was nominated Professor of Hebrew, at the Collège de France. In 1878, he was elected Member of the French Academy, and successively was created from Chevalier to Grand-Croix de la Légion d'honneur. Renan did not believe in the divinity of Jésus, and when he published his work : la VIE DE JÉSUS, Renan's name was made known all over the World.

Some exalted him immensely, others did the reverse. Renan at that time was the man more spoken of. Renan published many other works, among which the most celebrated are: the APOTRES, SAINT-PAUL, DIALOGUES PHILOSOPHIQUES,

SOUVENIRS D'ENFANCE ET DE JEUNESSE, le PRÊTRE DE NÉMI,
l'ABBESSE DE JOUARRE, le JUDAÏSME, ETC., ETC.

His qualities as a writer gave him one of the first places in modern Literature.

His funerals have been celebrated with magnificence, at the cost of the French Government, and it has been decreed that his remains should be deposited in the PANTHÉON.

1892. — October 6th, ALFRED TENNYSON, the English Poet Laureate, died in London, aged 81, after a short malady. ALFRED TENNYSON was born in 1809 at his father's parsonage at Somerly, Lincolnshire. He was partly educated at home and at a local boarding school. In due time, he proceeded to Trinity College, Cambridge, where he gained the Chancellor's Medal for a prize poem, entitled : TIMBUCTOO.

Up to 1850, appeared several of his poems, such as the PALACE OF ART, a *Dream of Fair Women*, the LADY OF SHALLOT, the MAY QUEEN, LADY CLARE VERE DE VERE, DORA, the GARDENER'S DAUGHTER, LOCKSLEY HALL, MORT D'ARTHUR, etc.

In 1850, IN MEMORIAM, which produced a great sensation. Shortly after, he was appointed POET LAUREATE. His official poems have generally marked the death or marriage of some member of the reigning house. Of all these, the finest is the Dedication of the IDYLLS OF THE KING to QUEEN VICTORIA. MAUD was published in 1855, ENOCH ARDEN in 1864, the WINDOW OR THE SONGS OF THE WRENS in 1870, the LOVER'S TALE in 1879, SIXTY YEARS AFTER in 1886, DEMETER in 1889.

Nearly ten years ago, Tennyson accompanied Mr Gladstone on a cruise in northern seas, and early in 1884, he accepted a peerage, which descends to his only surviving son, Hallain Tennyson. On the 12th, the remains of Tennyson were laid to rest in the Poet's Corner, in Westminster Abbey.

1892. — October 12th, XAVIER MARMIER, Member of the French Academy, Ex-Keeper of the Library of Sainte-Geneviève, died in Paris, aged 82. — Mr XAVIER MARMIER, was born at Pontarlier in 1809, was chiefly a writer of travels. He was a distinguished linguist. He was elected a Member of the French Academy in 1870.

One of his best books is entitled : LE SUCCÈS PAR LA PERSÉVÉRANCE.

He was very fond of buying books on the Paris quays, where he was well known. In his will, he left a sum of one thousand francs to the Quay's booksellers, this money to be spent in a banquet on the day of his funerals. For some reasons, this banquet did not take place on that day, but a few days ago.

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Curved	"	2/-
Taxidermist Knives	"	1/6
Long Forceps	"	3/-
Small	"	1/-
Insects' Nippers...	"	1/6
Sieve	"	2/-
Blowpipe for cleaning eggs...	"	2/-
Digger	"	2/- et 4 -
Folding ditto	"	6/-
Insect Pins, English, French or German	from	1/6 per 1000

Steel Pins for setting Butterfl.	4/- per 1000
Setting Boards...	1 to 2/- each
Butterfly Nets complete	from 1/6 to 5/-
Sweeping and water Nets	2/6
Cork in Sheets	3/- doz.
Magnifying Glasses	1/- to 5/-
Hammers...	1/6 to 5/-
Naphthaline	4/- per lb.
Botanical grey paper	6/- ream
Folding Umbrella for collec- ting Insects	10/-
Steel Perforator for making holes in eggs	1/-
Cutting Pliers	2/-
Flat...	2/-
Arsenical Soap..	2/- per lb
Glass Tubes for small insects and shells	1/- doz.
Pill boxes for ditto	4/- gross
Flax...	6d. per lb
Cotton wadding, per sheet	6d.
Fishing rods with accessories	2/-
Dredge for collect. shells, etc.	40/-
Taxidermist's case, containing 1 Pair of Scissors, 2 Knives 1 Lime, 1 Grater, 2 Pliers, 1 Hammer, 1 pair of For- ceps, 1 Brush, 3 Gimlets, etc. Complete...	from 12/- to 40/-
Shell-emptying with handle	1/-

All other utensils for Naturalistes can be had at a short notice, by ordering at the NATURALISTS' AGENCY.

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No. 1. For Humming Birds and Small Birds	at 20s per hundred
2. " Small birds up to Tanagers	24s "
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ARTIFICIAL EYES.

Black	Coloured	Cornered	Cornered and veined
<i>per gross.</i>			
Nº 4 to 4 6d	1s 6d	Nº 4 to 6	3s 6d
" 5 " 8 8d	2s 6d	" 7 "	5s 0d
" 9 " 10 1s 0d	4s 0d	" 9	6s 0d
" 11 " 2s 0d	5s 6d	" 10	7s 0d
" 12 " 2s 3d	7s 0d	" 11	8s 0d
" 13 " 2s 6d	10s 0d	" 12	9s 0d
<i>doz. of pairs</i>			
" 14 " 3s 0d	1s 6d	" 13	10s 0d
" 15 " 3s 6d	2s 6d	" 14	11s 0d
" 16 " 4s 0d	2s 6d	" 15	13s 0d
" 17 " 8s 0d	3s 0d	Larger size can be made to order.	
" 18 " 12s 0d	4s 0d		

Nº 1 to 4 are good for Humming Birds and others up to the size of Tanagers.

Nº 5 to 8 Tanagers to Magpies.

Nº 11 to 12 Pheasants, etc.

Nº 9 to 10 Magpies to Gulls.

Nº 13 to Hawks, Owls, Herons, etc.

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Prince Regent. " 8 " "
King Bird of Paradise " 4 " "
Paradise Bird various, 2 to 5 " "
Selected White Osprey skins (short). " 7 " "
Pale red (short) " 1 " "
Long white Osprey. " 24 " per oz.
Grey Heron. " 4 " each
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Jungle Cocks. " 4 " "
Small Bustard " 3 " "
Long Tail Tropic. " 16 to 20 " "
Short " 4 " "
Large Jacamar. " 4 " "
Small ditto. " 1 " "
Metallic Blue Merle. " 2 " "
Long Tail ditto. " 2 " "
Large Sea Gull " 1 shilling each
Large and Medium Sea
Swallows " 1 " "
Minuta. " 2 " "
Red Partridge. " 2 " "
California Quail. " 1 " "
Sand Grouse " 1 " "
Ptarmigan " 1 " "
Gelinotte Tails " 2 " hundred
Large Pitta " 2 " each
Jay " 1 " "
Woodpeckers " sixpence "
Metallic Starlings. " fourpence "
Black and White Starl. " fourpence "
Red Tanagers " 1 shilling "
Orange " ninepence "

Beetles various, all colors and sizes, from 4 shillings per thousand.

Black Velvet with golden, orange rump " eighteen pence.
With crimson rump. 2 shillings each
Large Bee Eaters " eighteen pence "
Hoopers " 1 shilling "
Scops " eighteen pence "
Medium Owls " 1 shilling "
Large ditto " 2 " "
Hawks " sixpence each
Coloured Finches " 1 shilling "
Blue Creepers " ten pence "
Green " sixpence "
Swallows " threepence "
Cock of the Rock " 4 shillings "
Indian Crow " 2 " "
Alpine Crow " 2 " "
Manakins various " sixpence to one shilling
Fly Catchers " three pence.
Sparrows " two pence "
Titmouse " sixpence "
Large Birds various " from sixp. "
Medium " from fourp. "
Small " fr. two pen. "
Swan Skin flat " 1 shilling "
Red Macaw " 2 " "
Heron Necks " 2 " "
King Fisher " 1 " "
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Cock Feathers. " females two pence.
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Long Tail ditto males. from 1 shilling
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TO THE MEMORY OF LINNÉ,
The Father of Systematic Classification, and
Binomial Nomenclature.

GENERA OF HUMMING BIRDS,

By A. BOUCARD.

CLASS AVES (BIRDS).

DIVISION PSILOPAEDES, SUND, 1872.

Young at birth, helpless, and entirely naked. Life sustained by the introduction of food into the throat by means of the parents bill. Nest occupied until the birds are full grown.

TROCHILI, Boucard, Cat., Av., 1876.

Order of Humming Birds.

Picarian birds with the palate nearly oegitognathous, possessing but one carotid artery, the sinistra, a nude oil gland and no coeca. The femoro caudal and ambious muscles are alone present, the flexor longus halucis, independent of the flexor perforans digitorum, tensor patagii brevis, pterylosis and sternum characteristic. Second, third, and fourth toes directed forwards, the hallux backwards, body small, sometimes minute. Bill varying from feeble to stout, generally longer than the head, straight or curved with a short gap devoid of bristles. Nostrils, basal, linear, covered by an operculum, sometimes hidden in frontal feathers. Tongue slender, filiform, capable of great extension, consisting of two minute parallel tubes. Wings narrow, pointed, the primaries, ten in number, stiff and long, the secondaries very short. The manus is very long, and the humerus very short, enabling the wing to be moved with great rapidity. Sternum large with deep keel. Tail composed of ten feathers varying greatly in shape and size. Tarsi short, either naked or clothed. Feet extremely small, toes short, claws curved and rather large. Plumage generally of the most brilliant metallic hues, equal to the brilliancy of precious stones, sometimes sombre. Females with very few exceptions, plain coloured.

FAMILY I. TROCHILIDÆ,

Or Family of Humming Birds.

Bonaparte, 1831.

Body small, sometimes very minute. Bill slender, straight or curved, shorter or longer than the head with feathers at base. Throat in males with only one exception, *M. Minima*, always covered with brilliant metallic feathers, crimson, lilac, red, etc. Females plainly coloured, with a patch of metallic feathers on throat, when fully adult. Underside, white, grey or puff. Tail very changeable in form and in length, according to species.

I commence my classification with the Genus *Trochilus*, as the most proper, being the first name proposed by Linné for these beautiful birds, and from which the names of the Order and first Family derive.

Then I continue with the various Genera closely and naturally allied one to another. Excepting for the few species, which I don't possess, the descriptions are taken from the birds in my collection.

GENUS I.—*Trochilus*, Linné, Syst. Nat. 1766, Vol. I., p. 189.

Cynanthus, Boie, Isis, 1831.

Colubris, Reich, Syst. Av. Nat., 1849, pl. 40.

Archilochus, Reich, Troch, Enum., 1855, p. 10.

Ornysmia, Muls and Verr, Class. Troch, 1865, p. 91.

TYPE.—*T. colubris*, Linné.

Bill straight, about same length as the head; wings short, tail forked, rectrices pointed. Nostrils hidden by frontal feathers, throat adorned with bright metallic feathers. Sexes unlike in plumage.

I. *TROCHILUS COLUBRIS*, Linné, Syst. Nat. 1766, Tom. I., p. 191.

Red Throated Humming Bird, Edwards, Hist., t. 1, p. 36.

Le Petit Rubis de la Caroline, Briss, Ornith., t. 3, p. 38.

Habitat, North America to Veragua, Cuba, Bahamas, and Bermudas.

Male.—Upperside and flanks bronzy-green, chin black, throat metallic ruby red, Breast and underside white, tinged with green. Medium rectrices golden green, lateral purplish brown, bill black.

* Total length, $3\frac{1}{2}$ in.; wings, $1\frac{5}{8}$; tail, $1\frac{3}{8}$; Culmen, $\frac{6}{8}$.

Female.—Upperside pale golden green, underside white.

2. TROCHILUS ALEXANDRI, Bourc and Muls, Ann. Soci. Science, Lyon, (1846).

Purple Throated Humming Bird, Gould, Monogr. Troch, Vol. III., p. 131.

L'Ornysme d'Alexandre Muls. Hist. nat. des. Oiseaux. mouches, t. 4, p. 62.

Habitat. California and Mexico.

Male.—Head dark brown. Upperside bronzy-green. Throat, black, bounded beneath by a brilliant band of metallic purple, a pure white band on breast, abdomen and flanks grey spotted with bronze feathers. Undertail coverts white with metallic green central spots, medium retrices bronzy-green, lateral black, glossed with green, bill straight and black.

Total length, $3\frac{2}{8}$ in.; wing, $1\frac{5}{8}$; tail, $1\frac{1}{8}$; Culmen, $\frac{6}{8}$.

Female.—Upperside metallic green, dull on top of head. Underside grayish with centre of abdomen white, central feathers metallic green, lateral greenish gray at base, then black with whitish rufous tips, in some these tips are pure white.

This species was discovered by Mr. Alexander in Mexico, and it was dedicated to him by Messrs. Bourcier and Mulsant.

It is a rare species; but I have been fortunate in getting a fine series from San Diego, co. California.

3. TROCHILUS VIOLAJUGULUM, Jeff. Auk. 1888, p. 168.

Purple Throated Humming Bird. *Oiseau mouche à gorge violette*. *Habitat*. Santa Barbara (California).

Male.—Upperside metallic green and gold, dull on forehead. Throat metallic violet with bluish reflections. Chin and line between gorget dull, a dull gray belt across the breast behind the throat. Breast and abdomen metallic green. Flanks green tipped with brown, ventral medium lines dullish. Wings purple-black. Primaries broad to tip, that of the first curved back, graduated in length from first to last. Tail slightly forked, feathers broad except the last pair, which are abruptly narrow and linear. Middle feathers and base of second pair, metallic green, rest dark with a distinct purple hue. Under tail-coverts white with metallic green central spots.

* Although I give the total length for each species, it is not to be relied upon, in the strict sense of the word; as the total length depends entirely from who prepared the skin. It is just as easy, when skinning, to shorten or lengthen the skin, by one inch, less or more, according to size of bird.

Total length, 360; wing, 182; tail, 118; culmen, 75. It resembles very much to *C. Annæ*, less the crown patch and the violet of the throat, instead of saphire. It is also distinguishable from *T. Alexandri*, by its larger size, broad primaries, and all the peculiarities of the tail.

Only one specimen of this species is known. It is in Jeffries Collection. Mr. Jeffries says "As but one specimen was procured, it might be a hybrid between *T. Alexandri* and *C. Lucifer*; but this is highly improbable, as it lacks the ruff and crown patch of one, and has a different wing and tail from either. It is more between *T. Alexandri* and *C. Annæ*; but it lacks the crown patch of the latter."

I should like very much to possess one specimen of this remarkable species, as by the description alone, it seems to me to be only a race of *Trochilus Alexandri*.

In some of my specimens of *T. Alexandri* the tail is similar to this species. In another, kindly offered to me by the authorities of Smithsonian Institution, and which was collected by Mr. Henshaw, at Sonoita Valley, Arizona, the bill is $\frac{1}{8}$ inch longer than in those of San Diego Co.

GENUS II.—*Calypte*, Gould Int. Troch., 1861, p. 87.

TYPE O. *COSTÆ*, Bourcier.

Bill longer than the head, straight or slightly arched. Feathers of crown and throat, brilliantly metallic. Tail short, the three outer feathers stiff, narrow and slightly incurved, tarsi clothed. Feet small, hind and fore toes nearly equal in length, the metallic feathers on sides of neck very elongated.

4. *CALYPTE COSTÆ*. Bourc. Rev. Zool., 1836, p. 294.

Mellisuga costæ, Gray, Gen. of Birds. Vol. I., p. 113.

Selasphorus costæ, Bonap., Conspl., Gen. Av., 1850, p. 52.

Atthis costæ, Reich, Aufz. der Colibr, 1853, p. 12.

Leucaria costæ, Muls., Hist. Nat. des Ois. mou. t. IV., p. 69.

Costu's Calypte, Gould, Mon. Troch. Vol. III., p. 134.

Leucarie de Costa, Muls., Hist. nat. des Ois mou. t. IV., p. 69.

Habitat. Mexico and California.

Male.—Upperside bronzy green, head, throat and elongated feathers of neck metallic purple with lilac and blue reflections, according to light. Breast and centre of abdomen pure white. Flanks pale bronzy green, undertail coverts white, bronzy green at centre. Tail green, two outer rectrices brownish gray with black tips, bill black.

Total length, $2\frac{3}{4}$ in.; wing, $1\frac{3}{4}$; tail, 1; culmen, $\frac{5}{8}$.

Female, Upperside bronzy-green, greyish on top of head. Underside grayish-white, throat with a few feathers forming

spot, metallic lilac. Median rectrices bronzy green, lateral, gray at base, then black with white tips.

This fine species was dedicated to Marquis Costa de Beauregard, who was a very enthusiast collector, and had in his time one of the finest collection of Humming Birds.

I bought his collection in 1878, and I found among many rare species, what I consider as the types, male and female of this species.

*5. *CALYpte FLORESI*, Gould, Mon. Troch. Vol. III., p. 139.

Selasphorus floresii, Gould, Mon. Troch., Vol. III., p. 139.

Floresi's Flame-bearer, Gould, Mon. Troch., Vol. III., p. 139.

Le Selasphore de Floresi, Muls., Hist. Nat., Ois. m. t. IV., p. 98.

Habitat, Bolanos, Mexico.

Male.—Back bronzy green, crown and throat metallic scarlet with violet reflections. Underside grayish white, excepting flanks, which are bronzy green. Wings purplish brown. Median rectrices green with purple reflections, outer webs of lateral feathers purple, inner deep reddish buff, bill black.

Total length, $3\frac{1}{4}$; wing, $1\frac{3}{4}$; tail, $1\frac{3}{8}$; culmen, $\frac{5}{8}$.

Female.—Unknown; probably like *C. costæ*.

This remarkable species was discovered in 1845 by Mr. Floresi, who sent it to Mr. Georges Loddiges. It is unique, and still in the Loddiges Collection.

6. *CALYpte ANNÆ*, Less, Ois, Mouch. 1829, p. 205.

Ornysmia annæ, Less, Ois, Mouch. 1829, p. 205.

Trochilus anna, Aud, B. Amer. Vol. iv, p. 425.

Mellisuga anna, Gray, Gen. of Birds. Vol. i, p. 113.

Selasphorus anna, Bp. Conspl. Gen. Av. 1850, p. 52.

Atthis anna, Reich, Aufz der Colib. 1853, p. 12.

Anna's Calypte, Gould, Mon. Troch. Vol. iii., p. 135.

Calypte d'Anna, Muls. Hist. Nat. Ois Mouch, t. iv. p. 74.

Habitat—Mexico and California.

Male.—Upper side golden green. Head, throat and elongated feathers of neck metallic crimson. Breast and centre of abdomen grey. Flanks golden green. Under-tail coverts golden green edged with grey. Median rectrices golden green, lateral dark brown with pale margins. Bill black.

Total length, $3\frac{3}{8}$ in.: wing, $1\frac{7}{8}$, and tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside golden green. Underside grey with flanks golden green. Throat spotted in middle with metallic

* All the species marked so * are those which I have not got and am willing to purchase.

crimson red feathers. Median rectrices golden green, lateral grey at base, then golden green, then black, the two outer feathers tipped with white. Bill black.

This species was dedicated to Mrs. Anna, Duchess of Rivoli, wife of Mariscal Massena, who formed a very fine collection of Birds, which is now the property of the Academy of Sciences of Philadelphia, United States.

I have killed many specimens of both sexes of this species in San Francisco, California, where it is abundant.

7. **CALYpte HELENÆ**, Lembeye, Aves, Isle of Cuba. 1850,
p. 70.

Orthorhynchus boothi, Gund, Jour. fur Ornith. 1856, p. 99.

Helena's Calypte, Gould, Mon. Troch. Vol. III., p. 136.

Le Calypte d'Helène, Muls. Hist. nat. Ois. Mou., t. iv., p. 78.

Habitat—Cuba.

Male.—Upperside and flanks greenish blue. Head, throat and elongated feathers of neck metallic crimson. Underside whitish. Tail metallic greenish blue. Wings purplish brown. Bill black.

Total length, $2\frac{5}{8}$ in. Wing, $1\frac{3}{8}$. Tail, $\frac{7}{8}$. Culmen, $\frac{1}{2}$.

Female.—Upperside dark green changing into bluish green on the lower part of back. Underside greyish white. Median rectrices dark bluish green, lateral bluish green at base, rest black tipped white, bill black.

This diminutive species, the smallest known, was discovered at Cadenas (Cuba) by Doctor Jean Gundlach. It is still very rare. I have only one young male in my collection.

GENUS III. Mellisuga, Brisson, Ornith, 1760, t. III, p. 695.

Dyrinia, Muls and Verr., Class Troch., 1865, p. 88.

TYPE T. *Minimus*, Linné.

Bill straight, shorter than the head, rather wide at base, graduating to a point. Wings long and primaries narrow. Tail slightly forked. No parure. Sexes alike. Size very minute.

Habitat, Jamaica, Haiti, Sto. Domingo.

8. **MELLISUGA MINIMA**. Linn, Syst. Naturae, 1766. Vol. I.
p. 193.

Le plus petit Oiseau mouche, Buff. Pl. enlum, 276, fig. 1.

Trochilus Minutulus, Vieill, Ois. Amer., Sept. 1807, t. 2, p. 73.

Trochilus Vieilloti, Shaw, Gen. Zool., Vol. VIII., p. 347.

Ornysmia Minima, Less, Oiseaux. Mouch, 1829, pl. 79.

Mellisuga Humilis, Gosse, B. Jamaica, 1847, p. 127.

Trochilus Catherineæ, Sallé, Rev. Zool., 1849, p. 498.

Hylocharis Nigra, Gray, Gen. of Birds, Vol. I., p. 114.
Hylocharis Niger, Bon. Consp., Gen. Av., 1850. Vol. I., p. 81.
Dyrinia Minima, Muls and Verr, Class Troch., 1865, p. 88.
Little Humming Bird, Gould, Mon. Troch., Vol. III., p. 133.
Le Mellisuge le plus Petit, Muls., Hist. Nat. Ois. m. t. iv., p. 83.
Habitat. Jamaica, Hayti, Sto. Domingo.

Male.—Upperside shining dark green. Throat white speckled with minute brown spots. Breast and centre of abdomen white. Flanks and undertail coverts green marked with gray. Median rectrices green, the remainder of tail black. Bill black.

Total length, $2\frac{3}{4}$ in; wing, $1\frac{3}{4}$; tail, $\frac{7}{8}$; culmen, $\frac{3}{8}$.

Female.—Upperside, light shining green. Throat, breast, and abdomen white. Flanks, golden green, tinged with gray. Tail green at base, then black, the lateral feathers tipped white.

A little smaller than the male.

Rather abundant in Jamaica; but rare in the collections.

GENUS IV. *Selasphorus*, Swains, Faun. bor. americ.

1831, vol. ii., p. 496.

TYPE: *Selasphorus rufus*, Gmelin.

Bill straight. Feathers of the neck elongated, metallic. Wings short, the quills narrowed and sometimes pointed. Tail moderately graduated, tips mucronate.

9. *SELASPHORUS RUFUS*, Swains, Faun. bor. americ. 1831, vol. ii., p. 496.

Rufous, Flame-bearer, Gould, Monog. Troch. vol. iii., p. 137.

Trochilus ruber, L. Syst. Nat. 1766, vol. i., p. 193.

Ruff necked Humming Bird, Lath. Gen. Syst., 1781, vol. ii., p. 785.

Le Sasin, Aud & Vieill, Oiseaux dorés, T. i., p. 110.

Mellisuga rubra, Gray, Gen. Birds, vol. i., p. 113.

Selasphorus alleni, Henshaw, Bull. Nutt. Ornith. Club, 1877, vol. ii., p. 54.

Selasphorus henshawi, Elliot, Bull. Nutt. Ornith. Club, 1877, vol. ii., p. 54.

Habitat.—Vancouver to South Mexico.

Male.—Head and back bronzy green. Back sometimes rufous. Sides of the head, rump, flanks and undertail coverts rufous. Throat brilliant metallic coppery red. Breast and centre of abdomen white. Wings purplish brown. Tail short, cuneate, acutely pointed. Median rectrices broad, tips of lateral ones very narrow. Bill straight, black. Tail, black.

Total length, $3\frac{3}{4}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronzy green. Underside whitish. Flanks and undertail coverts pale rufous. Throat white with

rufous spots. In the centre several metallic red spots. Median rectrices green, lateral ones rufous at base, then green, then black, tipped white. Bill black.

This species was discovered by Captain Cook.

I found it abundantly in California and in Mexico.

I have united *Selaphorus henshawi* and *Selaphorus allenii* with this species, as I do not see the differences which distinguish them. I have a fine series of this species from Vancouver Island to South Mexico.

Some from Vancouver and Arizona have the head and centre of back metallic green, remainder buff. Some from San Francisco, California, have the head and all the back metallic green; but I have also some with the head dull brown and the back buff spotted all over with green feathers. Others from Lower California, New Mexico, Arizona and Mexico have the head greenish brown and the back entirely buff. I think that the greenish plumage of the back belongs to those which are in nuptial plumage. It must be so; as in California, and especially in the neighbourhood of San Francisco, the place where they nest, I have killed many specimens in nuptial plumage. After the breeding season, they emigrate to Lower California, Arizona and Mexico. The adults are then with faded plumage and the young in immature plumage, and both rufous on back.

10. *SELAPHORUS SCINTILLA*, Gould, Mon. Troch., vol. iii.,
p. 138.

Little Flame-bearer, Gould, Mon. Troch., vol. iii., p. 138.

Selasphore etincelant, Muls. His. Nat. des Ois. M., t. iv., p. 105.

Habitat.—Costa Rica and Veragua (Columbia).

Male.—Upperside dark golden green. Throat metallic coppery red, breast white, abdomen rufous, flanks golden green. Tail rufous with a median line of purplish black on the central feathers, external rufous on inner web, purplish black on the outer. Maxilla black, mandibles flesh colour at base, rest black.

Length of wing, $1\frac{1}{4}$ inch. Tail, $1\frac{1}{8}$. Culmen, $\frac{3}{8}$.

Its very small size distinguishes that species from *S. rufus*, to which it is very allied by its coloration.

I have two male specimens from Chiriqui (Veragua) and four specimens collected by myself at Cartago (Costa Rica).

Female.—Head blackish brown. Back golden green. Throat white spotted with buff. Breast and abdomen white. Flanks and undertail coverts rufous. Median rectrices bronze green margined with rufous, lateral rufous with a subterminal black bar. Bill black.

This species was discovered by M. Warszewich on the Volcano of Chiriqui.

11. SELAPHORUS ARDENS, Salv. P.Z.S., 1870, p. 209.

Salvin's Flame-bearer, Gould, Suppl. Mon. Troch, pl. 42.

Selasphore à cravate d'un rouge ordent, Muls. Hist. nat. des Ois. m., t. iv., p. 103.

Habitat.—Veragua (Columbia).

Male.—Upperside bronzy-green. Lores and ear-coverts rufous, the latter mixed with black. Throat metallic amethystine red. Breast pure white with a rufous bar underneath. Abdomen and undertail-coverts whitish with centre rufous. Flanks greenish-rufous. Tail purplish-black margined with rufous. Wings purplish-brown. Bill black.

Length of wing, $1\frac{1}{2}$ in. Tail, $1\frac{1}{4}$. Culmen, $\frac{3}{8}$.

Female.—Upperside bronzy-green. Throat buffy-white spotted with brown. Breast white. Abdomen and flanks rufous. Middle tail feathers bronzy-green with black tips and edged rufous, lateral ones buff with a black bar across in their central part. Bill black.

This species is scarcely larger than *L. scintilla*. It was discovered on the volcano of Chiriqui, Veragua (Columbia), by Mr. Arcé.

I have two very fine males and one female of this rare species.

12. SELASPHORUS PLATYCERCUS, Swains, Ann. Phil. 1827, p. 441.

Ornismya tricolor, Less, Ois. Mou. 1829, p. 125.

Ornismya montana, Less, Trochil. pp. 161, 163.

Mellisuga platycerca, Gray, Gen. of Birds. Vol. I, p. 113.

Broad Tailed Flame-bearer, Gould, Monog. Troch. Vol. III. p. 140.

Selasphore à large queue, Muls. Hist. Nat. des Ois. m. Vol. IV., p. 95.

Habitat.—North America to Guatemala.

Male.—Upperside bronzy-green. White spot under the eye. Throat metallic amethystine-red. Breast white with rufous band on the sides. Abdomen and undertail coverts whitish grey. Flanks bronzy green. Median rectrices bronzy-green; laterals blackish-brown margined with rufous, underneath bluish-black, very slightly margined with rufous. Wings and bill black.

Length of wing, $1\frac{7}{8}$ in. Tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronzy-green. Throat white spotted with brown. Breast and abdomen and undertail-coverts whitish-grey. Flanks rufous. Middle tail-feathers bronzy green, lateral buff at base, remaining portion black with white tips. Bill black. Sometimes the throat is speckled with several metallic amethystine red feathers.

This species is rather common in Mexico, where I collected many specimens.

13. **SELASPHORUS FLAMMULA** Salv. P.Z.S. 1864, p. 586.

Rosy throated Flame-bearer, Gould, Suppl. Monog. Troch. p. 42.

Selasphore flammule, Muls. Hist. nat. des Ois. m. t. iv., p. 100.

Habitat.—Costa Rica and Veragua (Columbia).

Male.—Upperside bronzy-green. Throat metallic lilac-red, quite peculiar. Breast and abdomen white. Flanks bronzy green slightly margined with buff. Undertail-coverts white with base rufous. Median rectrices bronzy-green margined with buff, lateral purplish-black margined with rufous. Bill black.

Total length, $2\frac{7}{8}$ in. Wing, $1\frac{5}{8}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{3}{8}$.

Female.—Upperside bronzy-green. Throat white speckled with small bronzy green spots. Breast and abdomen white. Undertail-coverts buff. Median rectrices bronzy-green edged with rufous, lateral black with buffy white tips. Bill black.

I found this species nearly at the summit of Volcano Irazu, Cartago (Costa Rica.)

The type of this species (from Salvin & Godman's Collection), is in the collection of the British Museum, and is a poor specimen. It was discovered by Arcé.

* 14. **SELASPHORUS TORRIDUS**, Salv. P.Z.S., 1870, p. 208.

Torrid Flame-bearer Gould, Suppl. Mon. Troch, p. 41.

Le Selasphore brûlé, Muls. Hist. Nat. des. Ois. Mou. T. iv., p. 101.

Habitat.—Volcano of Chiriqui, Veragua, Columbia.

Male.—Upperside bronzy-green. Throat metallic pale purple-lilac with silvery reflections, somewhat like *S. flammula*, but very distinct, feathers on the sides of neck elongated as in *S. flammula*. Breast and middle of abdomen white.

Flanks green. Undertail-coverts buffy-white, the rest as *S. flammula*.

Total length, $2\frac{1}{2}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{5}{8}$.

Female.—Exactly the same as *S. flammula*.

This fine species was discovered by Arcé on the Volcano of Chiriquí, Veragua. It is represented in the Collection of the British Museum by seven adult males, 1 male junior and 2 females, all from Messrs. Salvin and Godman Collection.

GENUS V. **Catharma** Elliot, Ibis, 1876, p. 400.

TYPE: *O. orthura*, Lesson.

Bill longer than the head, broad at base, pointed at tip. Wings long reaching beyond the centre of the tail, which is extremely short and almost square.

Habitat.—Guiana and Venezuela.

15. **CATHARMA ORTURA**, Less. Hist. Nat. Trochil 1831,
pp. 85—88.

Trochilus orturus, Reich, Aufz. der. Colib. 1853, p. 12.

Tryphæna ortura, Bon. Rev. and Mag. Zool. 1854, p. 257.

Lesson's Flame-bearer, Gould, Suppl. Mon. Troch. p. 43.

Le Catharme à quene droite, Muls. Hist. Nat. Ois. Mouch. t. iv., p. 66.

Male.—Upperside bronzy-green. Behind the eye a small, white spot. Throat metallic amethystine-red, beneath which is a narrow white band. Centre of abdomen white. Flanks bronzy green, edged with buff. Median rectrices bronze-green, lateral green at base, rest black with white tips. Wings purplish-brown. Bill black.

Total length, $2\frac{5}{8}$ in. Wing $1\frac{3}{8}$. Tail, $\frac{7}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronzy-green. Ear coverts, cheeks and a line around lower part of the throat blackish-brown. Throat white spotted with brown. A band of white across the breast, beneath which is another dark brown. Rest of underside rufous. Central rectrices bronze-green, lateral bronze-green with apical black band. Undertail-coverts pale bronzy-green margined with grey. Bill black. This is a rare species. I have only one male in my Collection.

“Ex Collection Costa de Beauregard.”

GENUS VI. **Atthis**, Reich, Aufz. der Colib., 1853, p. 12.
TYPE: *O. Heloise*, Lesson and Delattre.

Bill about as long as the head, straight, rather flat on culmen. Wings nearly as long as the tail, which is rounded and short. Feathers of the throat much elongated.

Habitat: Mexico, Guatemala.

16. **ATTHIS HELOISÆ**, Less. & Delatt, Rev. Zool., 1839, p. 15.

Mellisuga heloisæ, Gray, Gen. of Birds, vol. i., p. 113.

Tryphaena heloisæ, Bon. Rev. and Mag. Zool., 1854, p. 257.

Selasphorus heloisæ, Gould, Mon. Troch., vol. iii., p. 141,

Heloisa's Flame-bearer, Gould, Mon. Troch., vol. iii., p. 141.

L'Atthis d'Heloise, Muls., Hist. Nat. Ois. Mouch, vol. iv., p. 91.

Male.—Upperside shining golden-green. Throat metallic reddish-violet with purple reflections. Breast, vent and abdomen white. Flanks golden-green. Under tail-coverts buffy-white. Median rectrices shining grass-green, lateral buff at base succeeded by a bar of black tipped with white. Wings purplish-brown, outer primary abruptly attenuated. Bill black.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{3}{8}$. Tail, 1. Culmen, $\frac{1}{2}$.

Female.—Upper side golden-green. Throat buffy-white spotted with brown nearly golden. Breast and abdomen white. Flanks buff. Upper tail-coverts golden-green. Median rectrices buff with a central bronze green spot on the internal edge, lateral buff at base, then barred slightly with bronze, and succeeded with a broad black band, with light buff tips.

This beautiful species was discovered in Jalapa (Mexico) by the celebrated naturalist traveller Adolphe Delattre. I have killed many specimens of both sexes at Cordoba and San Andres-Tuxtla (Mexico).

17. **ATTHIS ELLIOTI**, Ridgw, Proceed. U.S. Nat. Mus., 1878, p. 9.

Elliot's Flame-bearer, Gould, Suppl. Mon. Troch., p. 44.

L'Atthis d'Elliot.

Habitat.—Mexico, Guatemala.

Male.—Exactly the same as the preceding species, from which it can be only distinguished by the shape of the first primary, which is not abruptly attenuated. It is scarcely

sufficient to consider it as a distinct species, as the same thing occurs in all the young males and adult females of *A. Heloisea*.

I have several specimens of this variety collected by me in Oaxaca (Mexico) and in Guatemala.

GENUS VII. *Stellula*, Gould, Int. Troch. 1861, p. 90.

Stellura, Muls. and Verr., Class Troch., 1865, p. 88.

TYPE: *T. Calliope*, Gould.

Bill longer than the head, straight and pointed. Wings moderately long and sickle-shaped; first primary rigid. Tail short and truncate. Feet small, claws diminutive and curved.

Habitat, Mexico.

18. *STELLULA CALLIOPE*, Gould, P.Z.S. 1847, p. 11.

Calothorax calliope, Gray, Gen. Birds, vol. i., p. 113.

Stellura calliope, Muls, Hist. Nat. des Ois. m. t. iv., p. 87.

Mexican Satellite, Gould, Mon. Troch., vol. iii, p. 142.

La Stellure calliope, Muls, Hist. Nat. Ois, mouch. t. iv., p. 87.

Male.—Upperside bronzy-green. Feathers of the throat very long and narrow, metallic pink. Breast and abdomen white. Flanks bronzy-green and buff. Undertail-coverts white. Wings and tail purplish-brown. Bill black, base of mandible flesh color.

Total length, 2 $\frac{5}{8}$ in. Wing, 1 $\frac{1}{2}$. Tail, 1. Culmen, $\frac{1}{2}$.

Female.—Upperside bronzy-green. Throat white speckled with brown. Breast and abdomen white. Flanks and undertail-coverts buff. Median rectrices metallic bronzy-green, tipped black, lateral buff at base, underneath a narrow bronzy-green band, then black with buff tips. Internally they are buff at base, then black with a large white spot on tips of the three outermost feathers on each side.

This species was discovered in Mexico by Mr. Damien Flores d'Arcais.

It is rather rare. I have killed several specimens near Mexico.

GENUS VIII. **Calothorax**, Gray, 'Gen. of Birds, 1840, p. 13.

Lucifer, Reich, Syn. Av. Natur. 1849, p. 39.

Manilia, Muls. and Verr., Class Troch., 1865, p. 86.

Cyanopogon, Reich, Bon. Ann. Soci. Nat. 1854, p. 138.

TYPE: *C. lucifer*, Swainson.

Bill long, slender, curved throughout its length, broad at base; nostrils hidden by frontal plumes. Wings moderately pointed. Tail forked, outermost rectrix on either side shortest, sometimes consisting of but little more than the shaft, the webs being very narrow. Tarsi short, and partially clothed. Feet small. Sexes unlike.

Habitat.—Mexico.

19. **CALOTHORAX LUCIFER**, Swains, Phil. Mag. 1827, p. 442.

Ornismya cyanopogon, Less, Ois. Mouch. 1829, p. 50.

Trochilus simplex, Less. Trait. Ornit., 1831, p. 291.

Lucifer cyanopogon, Reich, Aufz. der. Colib. 1853, p. 13.

Mexican Star, Gould, Mon. Troch. Vol. iii., p. 143.

Le Calothorax Barbe bleue, Muls., Hist. Nat. des. Ois. m. t. iv., p. 27.

Habitat.—Mexico.

Male.—Upperside bronzy-green. Throat metallic lilac purple with bluish reflections, feathers elongated on the sides. Breast pure white, encircled with a narrow rufous band. Abdomen and undertail-coverts white. Flanks bronzy green, rufous near the feet. Tail purplish-brown. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{3}{4}$. Culmen, $\frac{3}{4}$.

Female.—Upperside-bronzy green. Lores black. Underside deep buff. Median rectrices bronze-green; lateral greenish at base, then black and tipped with white. Bill black. Same size as male. This species is abundant in Mexico.

20. **CALOTHORAX PULCHRA**, Gould, Ann. Mag. Nat. Hist., vol. iv., p. 97.

Manilia pulchra, Muls, Hist. nat. Ois. m., t. iv., p. 31.

Beautiful Wood star, Gould. Mon. Troch., vol. iii., p. 144.

La Manilie belle, Muls, Hist. nat. Ois. m., t. iv., p. 31.

Both sexes are exactly like the preceding species. The only way of distinguishing it is by the feathers of the tail, which are of uniform width; meanwhile in *C. lucifer* the outermost rectrices are filiform in shape, almost denuded of webs and pointed. I really do not know if it is sufficient to consider it as a species, and much less a genus as made by Mr. Mulsant.

It is true that all the species secured by me in Oaxaca (Mexico) in June, 1857, among which are the types of the species, were alike.

I used to kill them in the gardens of that city.

GENUS IX. Acestrura, Gould, Int. Troch. 1861, p. 91.

Polymnia, Muls. and Verr. Class. Troch, 1865, p. 91.

Acestura, Muls. Hist. Nat. des Ois, m. t. iv., p. 117.

Myrmia, Muls. Cat. Ois. mouch, 1875, p. 32.

TYPE O. *mulsanti*, Bourcier.

Bill longer than the head, slightly arched. Median rectrices very short; the two outer ones filamentous and shorter than the third. Wings small. Tarsi clothed, feet small. Sexes unlike.

Habitat.—S. America.

21. ACESTRURA MULSANTI, Bourc, Ann. Sci. Phys., Lyon, 1842, t. v., p. 342.

Ornismya mulsanti, Bourc, Ann. Sic. Phys. Lyon, 1842, t. v., p. 342.

Mellisuga mulsanti, Gray, Gen. of Birds, vol. i., p. 113.

Calothorax mulsanti, Bonap., Conspl., Gen. Av., 1850, vol. i., p. 85.

Lucifer mulsanti, Reich, Troch. Enum., 1855, p. 10.

Chætocercus mulsanti, Cab and Heine, Mus. Hein., 1860, p. 60.

Mulsant's Wood star, Gould, Mon. Troch. Vol. iii., p. 145.

L'Acesture de Mulsant, Muls. Hist. Nat. Ois., m. t. iv., p. 118.

Habitat.—Columbia, Ecuador, Peru, Bolivia.

Male.—Uppercide and flanks shining dark grass-green. Throat metallic violet-red. Line behind the eye, chin, breast, abdomen, undertail-coverts, and a tuft behind the

thigh, pure white. Wings dark purple. Tail purplish-black. Bill black.

Total length, $3\frac{3}{8}$ in. Wing, $1\frac{5}{8}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{5}{8}$.

Female.—Upperside golden-green, excepting the rump which is buff. Throat, breast and abdomen deep buff. Sides of the neck and breast brown. Median rectrices buff at base, then black slightly tipped buff, lateral buff with a black spot in centre of internal edge. Bill black. Same length as male.

22. ACESTRURA HELIODORI, Bourc, Rev. Zool., 1840,
p. 275.

Mellisuga heliodori, Gray, Gen. Birds. Vol. I., p. 113.

Calothorax heliodori, Bon, Cons. Gen. Av., 1850, Vol. I., p. 85,

Lucifer heliodori, Reich, Troch. Enum., 1855, p. 10.

Chaetocercus heliodori, Cab and Heine, Mus. Hein., 1860, p. 60.

Heliodore's Wood star, Gould, Mon. Troch. Vol. III., p. 117.

L'Acesture d'Heliodore, Muls, Hist. Nat. Ois., m. t. iv., p. 121.

Habitat, Columbia.

Male.—Upperside, abdomen and undertail-coverts dark grass-green. Throat metallic violet-red, feathers elongated on the sides. Breast greyish-white. A patch of white on the flanks. Wings purplish-brown. Tail brownish black.

Total length, $2\frac{5}{8}$ in. Wing, $1\frac{1}{8}$. Tail, $\frac{1}{2}$. Culmen, $\frac{1}{2}$,

Female.—Upperside golden-green. Lores and ear-coverts dark brown. Underside deep buff. Tail deep buff with sub-terminal black bar. Bill black.

Same length as male.

Very abundant in Columbia.

23. ACESTRURA DECORATA, Gould, P.Z.S., 1860, p. 309.

Decorated Wood star, Gould, Mon. Troch. Vol. III., p. 146.

Habitat, Mérida (Venezuela).

Both sexes of this species are exactly like the preceding, but the feathers of the throat are not so prolonged, and the colour is of a more metallic lilac red; but I doubt very much if this is sufficient to consider it as a distinct species.

I have several specimens of both sexes sent to me from Merida, Venezuela.

*24. *ACESTRURA MICRURA*, Gould, P.Z.S. 1853, p. 109.

Myrmia micrura, Muls., Hist. Nat. Ois., m. t. iv., p. 113.

Short Tailed Wood Star, Gould, Mon. Troch., vol. iii., p. 146.

La Myrmie à courte queue, Muls., Hist. Nat. Ois., m. t. iv., p. 113.

Habitat.—Bolivia.

Male.—Upperside bronze-green. Chin, sides of the throat, and underside pale buff. Throat metallic amethyst. Under tail-coverts white. Tail and bill black.

Total length, $2\frac{3}{8}$ in. Wing, $1\frac{2}{8}$. Tail, $\frac{3}{8}$. Culmen, $1\frac{1}{2}$.

Female.—Upperside bronze-green. Underside nearly white. Tail black, lateral rectrices tipped with white.

The types of this species are in the British Museum collection. They have five males and two females, which I have studied with care, and was not able to see in what they differ from *A. heliodori*.

GENUS X. *Chaetocercus*, Gray, Gen. of Birds, 1853, p. 22.

Osalia, Muls and Verr, Class Troch., 1865, p. 92.

Polyxemus, Muls, Hist. Nat. Ois., m. 1877, t. 4, p. 123.

TYPE: *O. Jourdani*, Bourcier.

Bill long as the head, straight, slender; nostrils hidden in frontal plumes. Median rectrices extremely short; two next the outermost long, equal, and uniform; outermost about half the length of the one next, filiform, graduating to a point, stiff. Sexes unlike.

Habitat.—Trinidad, Venezuela, Ecuador.

25. *CHAETOCERCUS JOURDANI*, Bourc, Rev. Zool., 1839, p. 295.

Mellisuga Jourdani, Gray, Gen. Birds, vol. i., p. 113.

Calothorax Jourdani, Bon, Conspl. Gen. Av., 1850, vol. i., p. 85.

Lucifer Jourdani, Reich, Troch. Enum., 1855, p. 10.

Osalia Jourdani, Muls. and Verr., Class. Troch., 1865, p. 32.

Jourdan's Wood Star, Gould, Mon. Troch., vol. iii., p. 150.

Le Chaetocerque de Jourdan, Muls, Hist. Nat. Ois., m. t. iv., p. 125.

Habitat.—Trinidad, Antillac.

Male.—Upperside and median rectrices, flanks and abdomen dark bronzy-green. Throat metallic violet. Breast white. Lateral rectrices purplish-brown, the longest internally, buff at centre. Bill black.

Total length, $2\frac{5}{8}$ in. Wing, $1\frac{3}{8}$. Tail, 1. Culmen, $\frac{3}{8}$.

Female.—Upperside and flanks golden-green. Median rectrices green, lateral buff with a subterminal black bar. Underside buffy-white.

26. *CHAETOCERCUS ROSAE*, Bourc. and Muls, Ann. Soc. Lyn. Lyon, 1846, t. ix., p. 316.

Mellisuga rosae, Gray, Gen. of Bird. vol. i, p. 113.

Calothorax rosae, Reich, Aufz der Col. 1853. p. 13.

Lucifer rosae, Reich, Troch. Enum. 1855. p. 10.

Crimson throated Wood Star, Gould, Mon. Troch. vol. iii. p. 149.

Le Chaetocerque de Rose, Muls., Hist. Nat. Ois. m. t. iv., p. 127.

Habitat.—Venezuela.

Male.—This species differs from *C. jourdani* only by the colour of the throat, which is deep metallic crimson.

Total length, 3 in. Wing, $1\frac{3}{4}$. Tail, $1\frac{1}{8}$. Culmen, $\frac{1}{4}$.

Female.—Differs from the preceding species by the underside, which is entirely pale buff. Size same as male.

This pretty species was dedicated to Mrs. Rose Duquaire, sister of Mr. E. Mulsant.

The specimens in my collection were sent to me direct from Merida (Venezuela).

*27. *CHAETOCERCUS BERLEPSCHI*, Simon, Mem. Soc. Zool de France, 1889, p. 231.

Berlepsch's Wood Star.

Le Chaetocerque de Berlepsch.

Habitat.—Ecuador.

Male.—Upperside dark bronzy green as the preceding species. Throat metallic amethystine red. Breast white. Abdomen and flanks dark green. Lateral rectrices pointed in all their length. In size it stands between *C. Rosae* and *C. Bombus*.

This charming species was dedicated to the well known Ornithologist, Count Berlepsch. It is unique in Simon's Museum.

28. CHAETOCERCUS BOMBUS, Gould, P.Z.S. 1870, p. 804.

Polyxèmous Bombus, Muls., Hist. Nat. des. Ois. m. 1877, t. iv., p. 123.

Little Wood Star, Gould, P.Z.S. 1870, p. 804.

Le Polyxème Bourdon, Muls., Hist. Nat. Ois. m. 1877, t. iv. p. 123.

Habitat.—Ecuador.

Male.—Upperside and abdomen dark bronze-green. Throat metallic crimson. Breast rufous. Tail purplish black, inner webs of third rectrices margined with buff at base. Wings purplish brown. Tuft behind the thigh white. Bill black.

Total length, $2\frac{1}{2}$ in. Wing, 1. Tail, $\frac{3}{4}$. Culmen, $\frac{1}{2}$.

Female.—Upperside golden-green. Underside buff. Tail buff with a subterminal black bar. Tuft behind the thigh white. Bill black. Same size as male.

This beautiful species was discovered in 1870 by Buckley, the well known explorer, at Canelos, Ecuador.

I have two males and one female in my collection, from which the above descriptions were taken.

*29. CHAETOCERCUS BURMEISTERI, Sclat, P.Z.S. 1887, p. 638.

Burmeister's Wood Star.

Le Chaetocerque de Burmeister.

Habitat.—Tucuman.

Male.—Upper side dark green metallic color. Wings purplish black. Chin whitish. Throat metallic crimson red with green reflections in certain lights. White spot behind the eyes descending to breast. Breast whitish with dark spot on every feather causing a greyish band on the middle of the breast. Remainder of breast and abdomen white. Undertail coverts yellow brown, spotted with green. The exterior rectrix black. The second has a clear brown stripe on the inner border. The third retrix is very short, only half an inch long and more than eight lines shorter than the exterior, and quite black. The two middle feathers are shorter than the third pair and partly covered by the coverts; they are of a metallic green colour like the coverts.

A single specimen of this species, which is very allied to *C. Bombus*, is known. It is in the National Museum of Buenos Ayres, Argentine Republic.

GENUS XI. **Tilmatura**, Reich, Aufz. der Colib. 1853, p. 8.

Tryphaena, Gould, Int. Troch, 1861, p. 96.

TYPE: *O. Duponti*, Lesson.

Bill straight, long as the head. Wings short. Tail deeply forked, outermost feather tapering rapidly at tip and curved inwards. Sexes unlike.

Habitat—Mexico and Guatemala.

30. **TILMATURA DUPONTI**, Less, Ois. Mouch Suppl. 1829, p. 150.

Ornysmia coelestis, Less, Trait. Ornith, 1831, p. 276.

Ornysmia zémès, Less, Rev. Zool, 1838, p. 315.

Mellisuga duponti, Gray, Gen. of Birds, vol. i., p. 113.

Tryphaena duponti, Bon., Consp., Gen. Av., 1850, p. 84.

Tilmatura lepida, Reich, Aufz der Colib., 1853, p. 8.

Thaumastura duponti, Bon., Rev. and Mag. Zool, 1854, p. 257.

Trochilus duponti, Jard, Nat. Lib. Hum. Birds, vol. i., p. 131.

Sparkling Tail Humming Bird, Gould, Mon. of Troch., vol. iii., p. 158.

Le Tilmature de Dupont, Muls. Hist. Nat. Ois. m. t. iv., p. 12.

Habitat.—Mexico and Guatemala.

Male.—Upperside dark golden-green. Throat deep metallic blue. Breast white. Abdomen and flanks, dark shining green, edged with light gray. Median rectrices shining green, next one dark brown, the others rufous at base, then black with a white spot, then dark brown tipped white. Bill black.

Total length 4 in. Wing $1\frac{1}{2}$. Tail 2. Culmen $\frac{5}{8}$.

Female.—Upperside bronzy-green. Underside buff. Throat paler, speckled in the centre with brown spots. Centre of abdomen white. Middle tail feathers green at base, remaining part black tipped with white. Bill black.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{3}{8}$. Tail, $\frac{7}{8}$. Culmen, $\frac{5}{8}$.

Dedicated by Lesson to M. Dupont, a dealer naturalist of Paris.

It is a scarce species. I have killed several specimens at Cordoba, Mexico. It is more abundant in Guatemala.

GENUS XII. **Myrtis**, Reich, Aufz. der Colib., 1853, p. 13.*Zephyritis*, Muls. and Verr. Class. Troch. 1865, p. 87.*Eudosia*, Muls. Cat. Ois. m. 1875, p. 32.*Eulidia*, Muls. Hist. Nat. Ois. m. t. iv., p. 114.TYPE O. *Fanny*, Lesson.

Bill longer than the head, curved for its entire length. Wings rather long, reaching half the length of the tail. Medium rectrices short almost hidden in the coverts, the others long, nearly of the same length.

Habitat.—Ecuador, Peru and Bolivia.

31. **MYRTIS FANNY**, Less. Ann. Scien. Nat., 1838, t. ix., p. 170.*Trochilus labrador*, Bourc. Ann. Soc. Sci. Lyon, 1839, p. 339.*Callothorax fanny*, Gray, Gen. of Birds, vol. i., p. 110.*Thaumastura fanny*, Bon., Compt. Rendus, 1850, p. 383.*Lucifer labrador*, Bon., Rev. and Mag. Zool. 1854, p. 257.*Fanny's Wood Star*, Gould., Mon. Troch., vol. iii., p. 151.*Le Myrtis de Fanny*, Muls., Hist. Nat. Ois. m. t. iv., p. 34.

Habitat.—Ecuador and Peru.

Male.—Upperside light bronze-green. Throat metallic bluish green with a narrow band of metallic blue, and the centre luminous violet forming a good spot. White band across the breast, sometimes edged with pale rufous. Abdomen and undertail-coverts dull white. Flanks bronzy, washed with buff. Tail brownish-black, the median with a bronze gloss. Wings brown. Bill black.

Total length, $3\frac{3}{8}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronzy-green. Throat and abdomen white, the rest buff. Median rectrices shiny-green, next green tipped with black. Lateral buff at base, then black tipped white. Bill black.

Size like the male excepting the tail, which is a little shorter.

The types "Ex Coll Bourcier and Elliott" are now in the American Museum of Natural History of New York.

I have a fine series of both sexes of this species collected by Buckley in Ecuador.

*32. **MYRTIS YARELLI**, Bourc, P.Z.S., 1846, p. 45.*Callothorax yarelli*, Reich, Aufz. der Colib., 1853, p. 13.*Lucifer yarelli*, Reich. Troch. Enum., 1855, p. 10.

Eudosia yarelli, Muls. Cat. Ois. m., 1875, p. 32.

Eulidia yarelli, Muls. Hist. Nat. Ois. m., 1877, t. iv., p. 115.

Yarrell's Wood Star, Gould. Mon. Troch., vol. iii., p. 152.

L'Eulidie de Yarell, Muls. Hist. Nat. Ois. m., 1877, t. iv., p. 115.

Habitat.—Bolivia.

Male.—Upperside and four central tail feathers light yellowish green. Throat metallic lilac with blue reflections. Underside white-washed with green on the flanks. Lateral feathers of tail stiff, narrow, and graduate to a point, dark brown. Bill black.

Total length, $2\frac{7}{8}$ in. Wing, $1\frac{3}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{3}{8}$.

Female.—Upperside like the male, Underside buffy-white. Middle tail feathers green, next green with black tips, remainder buff at base, then black tipped with white.

This rare species is one of my desiderata. According to Mulsant it was described by Bourcier from one specimen in Georges Loddiges Collection, and dedicated to Mr. William Yarrell, who was for a long time Vice-President of the Zoological Society of London. If it can be relied upon, the types of the species are still in the Loddiges Collection, now the property of his grandson.

GENUS XIII. *Rhodopis*, Reich, Aufz. der. Colib., 1853, p. 13.

TYPE: *O. vesper*, Lesson.

Bill nearly twice as long as the head, curved for its entire length, and wide at base. Frontal feathers projecting on the culmen and hiding the nostrils. Wings long, reaching beyond the middle of tail. Tail deeply forked, feathers graduated to their tips, which are pointed. Tarsi clothed. Sexes similar. Throat of brilliant hues.

33. RHODOPIS VESPER, Lesson, Ois. Mouches., 1829, p. 85.

Calothorax vesper, Gray, Gen. of Birds, vol. i., p. 110.

Thaumastura vesper, Bon, Compt. Rend., 1850, p. 383.

Lucifer vesper, Bon, Rev. and Mag. Zool., 1854, p. 257.

Rhodopis vespera, Reich, Aufz. der Colib., 1853, p. 13.

Calliphlox vespera, Reich, Troch. Enum., 1855, p. 10.

Evening Humming Bird, Gould, Mon. Troch., vol. iii., p. 154.

Le Rhodopis vesper, Muls., Hist. Nat. des. Ois., m. vol. iv., p. 24.

Habitat.—Peru.

Male.—Upperside pale bronzy-green. Rump rufous. Throat metallic amethystine red with purple-bluish reflections on the sides. Breast, abdomen, and under tail-coverts white. Flanks grey washed with green. Median rectrices olive-green, lateral bluish-black. Wings purplish-brown. Bill black.

Total length, $5\frac{1}{4}$ in. Wing, $2\frac{3}{8}$. Tail, $2\frac{1}{8}$. Culmen, $1\frac{3}{8}$.

Female.—Upperside like the male. Throat white, speckled with brown spots. Rest of underside like the male.

My specimens were collected by Mr. Whitely in Peru.

*34. **RHODOPIS ATACAMENSIS**, Leyb, Ann. Univ. Santiago, Chili, 1869.

Atacaman's Evening Humming Bird.

L'Oiseau mouche d'Atacaman.

Habitat.—Chili.

The only two specimens, male and female, which I have seen in the British Museum are exactly like the preceding species, but much smaller and slightly more rufous on the upperside. They were collected by Markham in 1880, at Payta, Peru. They are rather poor skins.

GENUS XIX. Thaumastura, Bon, Conspl. Gen. Av. 1850.
Vol. i., p. 85.

Phaetornis, Tschudi, Conspl., 1844, p. 37.

Cora, Reich, Bon. Ann. Sc. Nat. 1834, p. 138.

TYPE: *O. cora*, Lesson.

Bill short, straight, wide at base. Wings long. Tarsi partially clothed. Middle pair of rectrices almost hidden in coverts, next on either side greatly elongated and longest, remainder much shorter and decreasing in length to the outermost one. All of them very narrow but of uniform width to their entire length.

Habitat.—Peru.

35. **THAUMASTURA CORA**, Less and Garn, Voy. de la Coq. p. 13.

Trochilus (Phaetornis) cora, Tschud, Conspl. p. 37.

Calothorax cora, Gray, Gen. of Birds, vol i., p. 110.

Lucifer corae, Reich, Troch. Enum. 1855, p. 10.

Cora's Shear-tail, Gould, Mon. Troch., vol. iii., p. 153.

Le Thaumasture de Cora, Muls. Hist. Nat. Ois. m. t. iv., p. 9.

Habitat.—Peru.

Male.—Upperside pale golden-green. Throat metallic crimson with blue reflections on the sides. Breast and abdomen white. Flanks and undertail-coverts white-washed with pale golden-green. Tail black on outer web, white nearly to the tip on inner, tip black. Bill black.

Total length, $5\frac{7}{8}$ in. Wing, $1\frac{5}{8}$. Tail $3\frac{7}{8}$. Culmen, $\frac{1}{2}$.

Female.—Upperside pale golden-green. Throat white, speckled with pale green. Breast, abdomen, and under tail-coverts white. Flanks white-washed with pale green. Middle tail feathers green on inner web, white on outer with black tip, lateral white with a broad subterminal black band. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{5}{8}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{1}{2}$.

Dedicated by Lesson to Cora, Priestess of the Sun. I have several specimens of this fine species collected by Mr. Whitely in Peru. Two come from Ex Collection, Costa de Beauregard.

GENUS XV. **Heliactin**, Boié Isis, 1831, p. 546.

Heliactinia, Reich, Aufz der Colib. 1853, p. 12.

Heliactinus, Burm, Th. Bras. 1854-56, t. ii., p. 356.

TYPE T. *cornuta*., Pr. Max.

Bill longer than the head, slender terminating in a sharp point. On either side of head a tuft of feathers forming a short elevated crest. Wings long pointed. Four medium rectrices longest, broad at base, and graduating to a point. Tarsi bare. Sexes unlike.

Habitat.—Brazil.

36. **HELIACTIN CORNUTA**, Pr. Max, Beit zur Naturg von Braz, p. 99.

Trochilus dilophus, Vieill, Ency. Meth., vol. ii., p. 573.

Trochilus bilophus, Temm, Plan Colo, p. 18.

Mellisuga cornuta, Gray, Gen. of Birds, vol. i., p. 113.

Mellisuga bilopha, Steph, Gen. Zool., vol. xiv., p. 251.

Ornysmia chrysolopha, Less. Ois. Mouch, 1829, p. 55.

Heliactina chrysolopha, Reich, Aufz der Colib. 1853, p. 12.

Heliactinus cornutus, Burm, Th. Braz., vol. ii., p. 356.

Sun Gem, Gould, Mon. Troch. vol. iv p. 212.

l'Heliactin aux huppes d'or, Muls. Hist. Nat. des Ois. m. t. iv., p. 5.

Habitat.—Brazil.

Male.—Forehead and crown shining greenish-blue. Above the eyes a tuft of lengthened feathers, fiery crimson at base changing to bright gold at tip. Upperside golden-green. Throat with a tuft of long feathers covering the middle of breast, velvety black. Breast and abdomen pure white. Flanks bronzy-green. Median rectrices olive-green, blackish at tip, the next white with bronzy-green bar starting from near the base to half their length, the remaining three white with a wide black band in the middle. Bill and feet black.

Total length, $4\frac{1}{4}$ in. Wing, 2. Tail, $2\frac{1}{2}$. Culmen, $\frac{1}{2}$.

Female.—Upperside golden-green. Throat and abdomen reddish white. Flanks golden-green. Median rectrices bronzy-green, lateral bronzy-green at base, changing to black, apical half white. Bill black.

This wonderful species was discovered by Prince of Wied during his voyage in Brazil, where it was abundant then; it is very seldom sent from that country now and it is rather scarce in the collections.

I have several specimens from Bahia.

GENUS XVI. **Doricha**, Reich, Aufz. der. Colib., 1853, p. 12.

Elisa (Reich), Bon. Ann. Sc. Nat., 1854, p. 138.

Myrtis, Cab and Heine, Mus. Hein., 1860, t. iii., 59.

Dolicha, Heine, Journal fur Ornith., 1863, p. 208.

Amathusia, Muls. and Verr, Class Troch., 1865, p. 85.

Egolia, Muls. and Verr, Class Troch., 1865, p. 86.

Amalasia, Muls. Cat. Ois. m. 1875, p. 29.

Amalusia, Muls. Hist. Nat. Ois. m. 1877, t. ix., p. 15.

TYPE T. *enicurus*, Vieillot.

Bill longer than the head, slender, curved for its whole length. Wings moderate. Tail long, medium feathers nearly hidden in their coverts, two outer ones nearly equal and longest. Feet small. Sexes unlike.

Habitat.—Bahamas, Mexico, Guatemala, Costa Rica and Veragua.

37. **DORICHA ENICURA**, Vieill, Nouv. Dict. Hist. Nat., 1817, t. 23, p. 429.

Ornysmia heteropygia, Less. Ois. Mouch., 1829, p. 72.

Trochilus swainsoni, Less. Trochil., 1831, p. 167.

Calothorax enicura, Gray, Gen. Birds, vol. i., p. 110.

Lucifer enicurus, Bon, Rev. and Magas. Zool., 1854, p. 257.

Calliphlox henicura, Reich, Troch. Enum., 1855, p. 10.

Thaumastura enicura, Gould, Mon. Troch., vol. iii., p. 157.

Myrtis enicura, Cab and Heine, Mus. Hein., 1869, t. iii., p. 59.

Amalasia enicura, Muls., Cat. Ois., m. 1875, p. 29.

Amalusia enicura, Muls., Hist. Nat. Ois., m. 1877, t. iv, 16.

Slender Shear-tail, Gould, Mon., Troch., vol. iii., p. 157.

L. Amalusie à quene singulière Muls., Hist. Nat. Ois., m. t. iv., p. 17.

Habitat.—Guatemala.

Male.—Upperside and flanks golden-green. Chin black. Throat metallic purple with blue reflections. Breast and abdomen pale buff, sometimes deeper. Lateral rectrices, purplish-black; inner webs of two outer feathers narrowly margined with buff. Median rectrices shining grass-green. Bill black.

Total length, $4\frac{1}{2}$ in. Wing, $1\frac{3}{8}$. Tail, $2\frac{3}{8}$. Culmen, $\frac{3}{4}$.

Female.—Upperside, golden-green. Median rectrices, shining grass-green. Lores and ear-coverts, blackish-brown. Underside, buff, a tuft of feathers (as in the males), under the thigh, white. Tail feathers next the middle ones, rufous at base, then black with white tips. Bill, black.

Total length, 3 in. Wing, $1\frac{1}{2}$. Tail, $1\frac{2}{8}$. Culmen, $\frac{3}{4}$.

This species is rather abundant in Coban, Guatemala.

All the specimens of my collection are from that locality.

38. *DORICHA ELIZAE*, Less and Delattre Rev. Zool., 1839, p. 20.

Myrtis eliza, Reich, Aufz. der Colib., 1853, p. 13.

Lucifer eliza, Bon. Rev. et Magas de Zool., 1854, p. 227.

Calothorax eliza, Gray, Gen. Birds, vol. i., p. 110.

Thaumastura elizae, Gould, Mon. Troch., vol. iii., pl. 155.

Amalasia elizae, Muls., Cat. Ois., m. 1875, p. 29.

Amalasia elizae, Muls., Hist. Nat. Ois., m. 1877, t. iv, p. 20.

Mexican Shear-tail, Gould, Mon. Troch., vol. iii., p. 175.

L. Amaluzie d'eliza, Muls., Hist. Nat. Ois., m. 1877., t. iv., p. 20.

Habitat.—Jalapa, Yucatan (Mexico).

Male.—Upperside and flanks pale bronzy-green. Throat metallic purple-crimson with blue reflections. Breast, abdomen, and undertail-coverts white. Uppertail-coverts bronzy-green. Middle tail feathers greenish on inner webs, buff on outer. Lateral purplish-black, two next the outermost black margined with buff on the inner webs. Bill black.

Total length, $3\frac{3}{4}$ in. Wing, $1\frac{3}{8}$. Tail, $1\frac{5}{8}$. Culmen, $\frac{3}{4}$.

Female.—Upperside golden-green. Underside white tinged with buff. Median rectrices green edged with buff in the centre and tipped black, the remainder buff at base, then black with white tips.

This rare species was discovered by Delattre at Pasos del Toro, between Vera Cruz and Jalapa, Mexico.

I have three specimens in my collection. One from Ex Collection Costa de Beauregard, the other two were collected by Mr. Gaumer, at Progreso, Yucatan, in October, 1878.

39. DORYCHA BRYANTHAE, Lawr, Ann. N.Y. Lyc. Nat. Hist., 1867, vol. viii., p. 483.

Bryant's Wood Star, Gould, Suppl., Mon. Troch., pl. 46.

La Doriche de Bryant, Muls., Hist. Nat. Ois. m. t. iv., p. 43.

Habitat.—Costa Rica, Veragua.

Male.—Upperside dark golden-green. Upper tail-coverts dark green internally, black externally. Throat metallic crimson. Breast white, tinged with pale buff. Abdomen deep rufous. Flanks golden-green. Undertail-coverts green, margined with rufous. Tail purplish-black, the rectrices margined on their inner webs rufous. Bill black.

Total length, 4-in. Wing, $1\frac{3}{4}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{7}{8}$.

Female.—Upperside golden-green. Middle tail feathers grass-green, then purplish-black, with rufous tips. Throat and breast pale rufous. Abdomen and undertail-coverts deep rufous. Sides of neck and upper part of flanks dark green. Bill black.

Total length, $3\frac{1}{2}$ in. Wing, $1\frac{5}{8}$. Tail, 1. Culmen, $\frac{7}{8}$.

This species was discovered by Mr. Carmiol in Costa Rica, February, 1867.

It was dedicated by Mr. Lawrence to Mrs. Bryant, of Boston. I have a fine series of this species captured in Costa Rica and Veragua.

40. DORYCHA EVELYNÆ, Bourc, P.Z.S. 1847, p. 44.

Calothorax evelynæ, Gray, Gen. of Birds, vol. i., p. 110.

Lucifer evelynæ, Reich, Troch. Enum., p. 10.

Calothorax evillina, Bon. Rev. and Mag. Zool., 1854, p. 257.

Trochilus bahamensis, Bryant, Proceed. Nat. Hist. Soc., Boston, 1859, vol. vii., p. 106.

Bahama Wood Star, Gould, Mon. Troch., vol. iii., p. 156.

La Doriche d'Evelyne, Muls., Hist. Nat. Ois. m. t. iv., p. 84.

Habitat.—Nassau and Providence, “Bahamas.”

Male.—Upperside pale golden-green. Throat metallic crimson, with violet reflections at base. Breast white. Abdomen rufous. Flanks green, mingled with rufous. Undertail-coverts buffy-white. Median rectrices purple-black; the inner web of all, excepting that of the internal feather, rufous. Bill black.

Total length, $3\frac{1}{2}$ -in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{3}{4}$.

Female.—Upperside pale green. Throat buffy-white. Abdomen and undertail-coverts rufous. Middle tail-feathers bronzy-green, lateral rufous, with a sub-terminal black band. Bill black.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{1}{2}$. Tail. 1. Culmen, $\frac{5}{8}$.

This species is very rare in the collections. I have only one fine male, collected at Long Island, Bahamas, by Chas. B. Cory, of Boston, and graciously given to me.

41. DORYCHA LYRURA, Gould, Ann. and Mag. Nat. Hist., 1869, vol. iv., p. 111.

Lyre shaped Wood Star, Gould, Suppl. Mon. Troch., p. 47.

La Doryche petite Lyre, Muls. Hist. Nat. Ois. m. t. iv., p. 41.

Habitat.—Inagua, Bahamas.

Male.—Upperside pale bronze-green. Forehead and throat metallic purplish-crimson, with blue reflections forming a large metallic blue band at base. Breast white. Abdomen and undertail-coverts rufous. Flanks golden-green. Tail, lyre-shaped, feathers turning outwards at tips, purplish-black, all the feathers except the middle and outermost ones with inner web rufous. Bill black.

Total length, $3\frac{1}{2}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{1}{2}$.

Female.—Upperside pale green. Throat and breast dull white. Abdomen and undertail-coverts rufous. Flanks rufous, tinged with green. Tail rounded. Median pair shining bluish-green, remainder buff at base, with a broad black central band and tips dull white. Bill black.

Total length, $3\frac{1}{2}$ ins. Wing, $1\frac{5}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

This is also a very rare species. I have two very fine male specimens and one female. One male was graciously offered to me by the Authorities of the Smithsonian Institution when I visited this Magnificent Institution in 1876. It was collected by Doctor Bryant at Inagua. The two other specimens were presented to me by my friend, Mr. Chas. Cory, of Boston. They were collected by Mr. C. L. Maynard at Inagua.

GENUS XVII. **Calliphlox**, Boié Isis, 1831, p. 544.

Philodice, Muls. and Verr, Class. Troch., 1865, p. 86.

TYPE: *T. Amethystinus*, Gmelin.

Bill shorter than the head, straight, slightly curved at tip. Tail long, deeply forked, feathers narrow. Sexes unlike.

Habitat.—Trinidad, Venezuela, Guiana, Brazil.

42. **CALLIPHLOX AMETHYSTINA**, Gmel., Syst. Nat., 1788, vol. i., p. 496.

Mellisuga amethystina, Steph., Gen. Zool., vol. xiv., p. 243.

Trochilus brevicauda, Spix, Av. Braz., vol. i., p. 79.

Ornysmia amethystina, Less, Oiscaux. Mou., 1829, p. 150.

Ornysmia amethystoides, Less, Troch., 1831, p. 79.

Mellisuga amethystoides, Gray, Gen. of Birds, vol. i., p. 113.

Trochilus campestris, Pr. Max, Beit. Naturg. Bras., p. 73.

Tryphaena amethystina, Bon. Conspl. Gen. Av., 1850, vol. i., p. 84.

Tryphaena amethystoides, Bon. Conspl. Gen. Av., 1850, vol. i., p. 84.

Calliphlox amethystoides, Reich, Aufz. der Colib., 1853, p. 12.

The Amethyst, Gould, Mon. Troch., vol. iii., p. 159.

Le Calliphlox amethyste, Muls., Hist. Nat. Ois. m. t. iv., p. 46.

Habitat.—Trinidad, Venezuela, Guiana, Brazil.

Male.—Upperside bronzy-green. Throat metallic amethyst, beneath which is a band of dull white. Flanks green. Abdomen gray. Undertail-coverts green edged with gray. Central tail feathers green, lateral purplish brown. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{3}{8}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{1}{2}$.

Female.—Upperside golden-green. Underside pale gray. Throat spotted with brown. Medium rectrices bright green, laterals have base purplish-gray washed with green, remaining part black with white tips. Slightly smaller than male.

It is rather common in Brazil and Guiana.

43. CALLIPHLOX RORAIMAE, Boucard, H. Bird, vol. i., p. 52.

Roraima's Amethyst.

L'Améthyste de Roraima.

Habitat.—Roraima, B. Guiana.

Male.—Upperside dark bronzy-green. Throat metallic amethyst-red as in *Selasphorus platycercus*, beneath which is a narrow band of white. Abdomen and flanks green washed with gray. Upper and undertail-coverts green. Tail purplish-brown. Bill black.

Total length, $3\frac{1}{2}$ in. Wing, $1\frac{5}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronzy-green. Throat white with a central spot, amethyst-red, beneath which is a narrow grayish band. Sides of neck and breast golden-green. Flanks, abdomen and undertail-coverts, rufous. Tail purple-brown with rufous tips. Bill black.

This species was discovered by Mr. Henry Whitely at Roraima, British Guiana.

Types in Boucard's Museum.

44. CALLIPHLOX MITCHELLI, Bourc, P.Z.S., 1847, p. 47.

Mellisuga mitchelli, Gray, Gen. of Birds, vol. i., p. 113.

Calothorax mitchelli, Reich., Aufz. der Colib, 1853, p. 13.

Lucifer mitchelli, Reich. Troch. Enum., 1855, p. 10.

Tryphaena mitchelli, Bon. Rev. and Mag. Zool., 1854, p. 257.

Mitchell's Amethyst, Gould., Mon. Troch., vol. iii., p. 160.

Le Calliphlox de Mitchel, Muls., Hist. Nat. Ois. m. vol. iv., p. 50.

Habitat.—Ecuador.

Male.—Upperside dark green. Throat dark metallic-violet. Breast grayish-white. Abdomen and flanks dark green, washed with buff near the thigh. Tail and wing dark purple. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{3}{8}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{1}{2}$.

Female.—Upperside dark green. Underside buff, changing to rufous on the abdomen and undertail coverts. Middletail feathers bronze-green, lateral rufous with subterminal black bar. Bill black.

Total length, $2\frac{5}{8}$ in. Wing, $1\frac{1}{2}$. Tail, $\frac{7}{8}$. Culmen, $\frac{1}{2}$.

This rare species has been dedicated by Mr. Mulsant to Mr. Mitchel, the collaborator of Doctor Gray, for the Genera of Birds.

I have several specimens collected by Buckley in Ecuador.

FAMILY II. LOPHORNIDÆ, OR FAMILY OF COQUETTES.

Body small, sometimes very minute. Bill slender, short and straight. Head usually crested. Throat, in males very brilliant, in some, the feathers of the sides of throat are very elongated and beautifully spotted, forming a beautiful collar. Tail rounded in some as in the genus *Lophornis*. In others, the rectrices are of variable forms, sometimes very long, narrow and acute, as in the genus *Gouldia*, in others, short and acute with the shaft of outermost very long and terminating with a spatula as in the genus *Discura*. One of the principal characters of the family which is constant for all the species is the white or buff band crossing the rump in both sexes. Sexes unlike.

TYPE: *Lophornis*, Lesson, Hist. Nat. Ois. mou. 1829, p. 37.

GENUS XVIII. *Lophornis*, Less. Hist. Nat. Ois. Mouch, p. 37, 1829.

Bellatrix, Boié Isis, 1831, p. 545.

Lophorinus, Bon. Rev. et Mag. Zool., 1854, p. 257.

Polemistria, Cab and Heyne. Mus. Hein., 1860, t. iii., p. 63.

Telamon, Muls. and Verr., Class. Troch., 1865, p. 75.

Paphosia, Muls. and Verr., Class. Troch., 1865, p. 75.

Dalia, Muls. Cat. Ois. Mou., 1875, p. 27.

Idas, Muls. Cat. Ois. Mou., 1875, p. 27.

Aurinia, Muls. Cat. Ois. Mou., 1875, p. 27.

TYPE T. *ornatus*, Bodd.

Bill short and straight. Head crested. Throat metallic, with elongated ornamental feathers on the sides, more or less lengthened, and projecting outwards. Tail rounded. Females dull.

Habitat.—Mexico, Central America, Trinidad, Guiana, Brazil, Venezuela, Columbia, Ecuador, Peru and Bolivia.

45. *LOPHORNIS ORNATUS*, Bodd. Plan. enlum. d'Aub., 1783, pl. 640, fig. 3.

Ornismya ornata, Less. Ois. Mouch. 1829, p. 139.

Mellisuga ornata, Gray, Gen. Birds, vol. i., p. 13.

Lophornis auratus, Bon. Conspl. Gen. Avi., 1850, vol. i., p. 83.

Lophornis ornata, Reich. Aufz der Colib. 1883, p. 12.

Tufted Coquette, Gould, Mon. Troch., vol. iii., p. 117.

Le Lophornis Huppe-Col. Muls. Hist. Nat. Ois., m. 1876, t. iii., p. 216.

Habitat.—Trinidad, Venezuela, Guiana.

Male.—Head and crest shining dark chestnut. Forehead and throat metallic green. Upperside golden-green. Rump and uppertail-coverts bronzy-brown, a white band across the rump, sometimes this band is slightly buff. On each side of throat a series of lengthened graduated feathers, pale buff, each feather tipped with metallic green. Underside bronzy-green with a narrow rufous tinge under the throat. Undertail-coverts greenish-buff. Tail brownish-chestnut externally margined and tipped with bronzy-green. Bill flesh color, black at tips.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{5}{8}$. Tail, 1. Culmen, $\frac{3}{8}$.

Female.—Upper and underside bronzy-green. Front throat and upper part of breast buff. Across the rump a band of buffy white. Tail buff with a broad subterminal blackish band with golden-green reflections. Wings purplish-black.

46. *LOPHORNIS GOULDI*, Lesson, Trochil., 1831-33, p. 103.

Bellatrix gouldi, Reich. Aufz der Col., 1853, p. 12.

Gould's Coquette, Gould, Mon. Troch., vol. iii., p. 118.

Le Lophornis de Gould, Muls., Hist. Nat. Ois., m. vol. iii., p. 219.

Habitat.—Para. (Brazil.)

Male.—Crest chestnut-red. Upperside bronzy-green. Rump reddish-brown crossed by a band of white. Forehead, throat and breast metallic green, with golden reflections. On the other

side lengthened graduated feathers pure white with a round metallic golden green spot at tip. Abdomen and flanks dark bronzy-green. Tail chestnut-red, with margins and tips bronzy-green. Bill flesh color with brown tips.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{6}{8}$. Tail, 1. Culmen, $\frac{3}{8}$.

Female.—Upper side golden-green. Rump reddish-bronze crossed by a band of buffy-white. Throat buff, spotted dark brown. Breast white, with metallic golden spots. Abdomen and flanks golden-green. Median rectrices bronzy-green, lateral buff with bronzy-green subterminal bar. Same length as male.

I have one very fine adult pair of this extremely rare species, collected many years ago, near Para.

47. *LOPHORNIS MAGNIFICUS*, Vieill, Nouv. Dict. Hist. Nat., 1817, t. vii., p. 367.

Oiseau mouche huppe-col blanc, Vieillot.

Colibri helios, Spix, Av. Bras., 1824, t. i., p. 81

Trochilus decorus, Licht, Doubl., p. 14.

Ornismya magnifica, Less. Man. Ornith., t. ii., p. 80.

Ornismya strumaria, Less. Ois. Mou., 1829, p. 143.

Lophornis strumaria, Less. Trait. Ornith, 1831, p. 285.

Mellisuga magnifica, Gray, Gen. Birds, vol. i., p. 113.

Bellatrix magnifica, Reich. Aufz der Colib., 1853, p. 12.

Telamon magnificus, Gray, Handl. Birds, vol. i., p. 147.

Idas magnificus, Muls. Hist. Nat. Ois. Mouch., 1876, vol. iii., p. 211.

Frilled Coquette, Gould, Mon. Troch., vol. iii., p. 119.

l'Idas magnifique, Muls., Hist. Nat. Ois. Mouch., 1876, vol. iii., p. 212.

Habitat.—Brazil.

Male.—Very like *L. gouldi* in size and coloration. The principal differences are that the elongated feathers of the neck have the tips crossed by a bar of metallic green instead of a spot. At base of throat, the feathers are rufous instead of pure white. The abdomen and flanks are of a lighter green with a grayish tinge.

Total length, $2\frac{7}{8}$ in. Wing, $1\frac{1}{2}$. Tail, 1. Culmen, $\frac{3}{8}$.

Female.—Exactly like *L. gouldi*.

This charming species was discovered by Mr. Delalande, a French Naturalist, who explored Brazil.

48. LOPHORNIS HELENÆ, Delattre, Echo du Monde savant, 1843, p. 1068.

Mellisuga helenæ, Gray, Gen. of Birds, vol. i., p. 133.

Paphiosa helenæ, Muls. Hist. Nat. Ois. Mou. 1876, vol. iii., p. 205.

Princess Helena's Coquette, Gould, Mon. Troch., vol. iii., p. 123.

La Paphosie d'Hélène, Muls. Hist. Nat. Ois. Mou. 1876, vol. iii., p. 205.

Habitat.—Mexico, Guatemala.

Male.—Top of head and crest dark metallic green. In the middle of the occiput, six long slender greenish-black feathers, forming a crest extending as far back as the rump. Upperside golden-green. Rump bronzy-brown, crossed by a white line, sometimes slightly rufous. Throat metallic golden-green, surrounded by long shining bluish-black feathers. On each side of the neck a few elongated buff feathers. Breast golden-green. Flanks and abdomen pure white, each feather with a golden spot on tip. Undertail-coverts dark rufous. Median rectrices green, rufous at base, lateral deep rufous, margined with brown. Bill flesh color with black tips.

Total length, $2\frac{1}{2}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{3}{8}$.

Female.—Upperside golden-green. Rump black, crossed above with a white line. Wing, purple-black. Throat rufous-white with small brown-golden spots. Breast golden. Abdomen and flanks white with golden spots. Median rectrices, grayish-green, then black with a rufous spot at tip, lateral deep rufous, black in the middle.

This beautiful species was discovered at Jalapa, Mexico, in 1843, by the well known naturalist, Mr. Delattre. It was dedicated by him to Princess Hélène d'Orléans.

I have found this species at Tospam, near Cordoba, Mexico, and at Sante Comapam, near San Andres Tuxtla, department of Vera Cruz, "Mexico." It is a very rare species. All the specimens which I have from Guatemala were procured near Coban, Alta Vera Paz.

49. LOPHORNIS ADORABILIS, Salv., P.Z.S., 1870, p. 207.

Dialia adorabilis, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 208.

Salvin's Coquette, Gould. Mon. Troch. Suppl., 1886, p. 49.

La Dialie adorable, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 209.

Habitat.—Chiriqui, Columbia.

Male.—Forehead metallic ruby red. Crown pure white with elongated feathers on the occiput, forming a crest. The few narrow lengthened dark metallic green feathers, mentioned by Mr. Daniel G. Elliot, on each side of the occiput, do not exist in the male specimen which I possess. These feathers exist on each side of the neck, they are very long and ornament the throat in a peculiar manner. Upperside bronzy-green. Rump dark purple crossed by a narrow pale rufous band. Throat metallic grass-green. Breast pure white. Abdomen, flanks and undertail-coverts rufous, with a few bronzy-green feathers on flanks. Median rectrices rufous edged with bronzy-green, lateral rufous with external edges bronzy-green. Wings purple. Bill, flesh color, with black tips.

Total length, 3-in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{8}$. Culmen, $\frac{7}{8}$.

Female.—Head dark brown. Upperside bronzy-green. Throat and breast white, spotted with brown. Tail deep buff with a subterminal black bar. Flanks bronzy-green. Abdomen and undertail-coverts deep rufous. Rump as in the male.

This exceedingly rare and charming species was discovered at Bugaba, near the Volcano of Chiriqui, by Mr. Arcé, a native of Guatemala, to whom Science is indebted for several new species.

I have only one male specimen, sent to me by Mr. Arcé.

50. *LOPHORNIS PAVONINUS*, Salv. & Godm. Ibis., 1882, p. 81.

Roraima Coquette, Gould, Mon. Troch., Suppl., pl. 50.

Le Lophornis de Whitley.

Habitat.—Roraima, British Guiana.

Male.—Head shining golden-green, with a velvety black bar in the centre. Upperside dark grass-green. Rump bronzy-green crossed by a narrow white band. Throat dark bronzy-green with black reflections. On the sides of the neck, graduated elongated feathers extending over the rufous at base with a small white spot, then metallic-green with a round black spot in the centre near the tip of each feather, resembling somewhat to the colouring of the feathers of a peacock-tail. It is quite ornamental and enhances greatly the beauty of this bird. Breast, abdomen, and flanks dark bronzy-green, nearly black in

centre of abdomen. Undertail-coverts dark grey. Tail bronzy-green with narrow white tips. Wings purple-black. Bill black.

Total length, 3 in. Wing, $1\frac{5}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{3}{8}$.

Female.—Upperside dark grass-green. Rump bronzy-green crossed by a narrow white band. Throat, breast, and abdomen rufous-white, streaked with black. Flanks bronzy-green. Undertail-coverts rufous with a bronzy-green band in centre. Median rectrices bronzy-green with black tips, lateral bronzy-green with a subterminal black bar and greyish white tips. Wings purple. Bill black.

This magnificent species was lately discovered by the well-known collector, Mr. H. Whitely, at Roraima, British Guiana.

I have two very fine pairs purchased from Mr. Whitely.

51. *LOPHORNIS VERREUXXI*, Bourc. Rev. Zool., 1853, p. 193.

Bellatrix verreauxi, Bon. Rev. et Mag. Zool., 1854, p. 257.

Polemistria verreauxi, Cab. and Hein. Mus. Hein., 1860, t. iii., p. 63.

Lophornis insignibarbis, Simon. Bull. Soc. Zool. France, xv., p. 17.

Peruvian Coquette, Gould. Mon. Troch., vol. iii., p. 127.

Polémistrie de Verreaux, Muls. Hist. Nat. Ois. Mou., 1876, t. iii., p. 221.

Columbian Coquette.

Habitat.—Columbia.

Male.—Forehead and patch behind the eye, bright metallic grass-green. Crest elongated, deep purplish-bronze, each feather margined and tipped with dark green. Back and flanks dark grass-green. Rump bronze-green, crossed above with a white band. Throat and sides of neck pale metallic green, the long feathers of neck tipped white. Centre of breast and abdomen dark green with black reflections. Upper tail-coverts bronzy-purple. Tail purplish-bronze with external margins bronzy-green. Wing purplish-black. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{5}{8}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{1}{2}$.

Female.—Head dark brown. Upperside dark grass-green. A line of white on sides of throat. Throat and abdomen black, spotted with pale buff. Line across the rump pale buff. Tail bronze-green at base changing to blackish-brown, all the lateral feathers tipped white. Undertail coverts blackish brown. Bill black.

This species, received by Mr. Bourcier from Columbia, was dedicated by him to his friend, the well known Ornithologist, Mr. Edouard Verreaux.

Its proper name should be the Columbian Coquette, as this species is restricted to Columbia, as far as I know.

I have seen a young male specimen from Columbia in the collection of my friend, Mr. Eugène Simon, of Paris. It was without the elongated feathers of the neck, which were replaced by a beautiful metallic grass-green throat. My friend, Mr. Simon, has described this bird and given the name of *L. insignibarbis*; but I am quite certain that it is only the livery of a young male of *L. verreauxi*, just before taking the plumage of an adult bird.

52. LOPHORNIS HAUXWELLI, N. Sp.

Hauxwell's Coquette.

Le Lophornis d'Hauxwell.

Habitat.—Nauta, Upper-Amazons.

Male.—Very much like the preceding species, with which it has always been mixed, but having two fine adult pairs of this bird, collected by Mr. Hauxwell, at Nauta, I am able to point the differences which exist between the two species. All the upperside of this species is bronzy-green and not dark green as in *L. verreauxi*, the band across the rump is pale rufous in both sexes, the tail is reddish-purple with external margins dark brown instead of purplish-bronze, the uppertail-coverts are crimson-purple, instead of bronzy-purple. The underside is exactly the same as *L. verreauxi*.

The female has also the back of a lighter green than *L. verreauxi*, the chin and line under the eyes is pale buff, the flanks are golden-green spotted with buff, the tail is grayish at base, then dark bronze, nearly black, with the lateral feathers tipped with a large grayish spot.

I dedicate this species to Mr. Hauxwell, its discoverer.

53. LOPHORNIS CHALYBEA, Vieill, Enc. Méth., vol. ii., p. 574.

Trochilus festivus, Licht. Doubl., p. 14.

Colibri mystax, Spix. Av. Bras., 1824, t. i., p. 82.

Ornismya vieilloti, Less. Hist. Nat. Ois. Mou., 1829, p. 186.

Mellisuga chalybea, Gray, Gen. Birds, vol. i., p. 113.

Lophornis audeniti, Bon. Conspl. Gen. Av., 1850, vol. i., p. 84.

Festive Coquette, Gould, Mon. Troch., vol. iii., p. 124.

La Polémistrie de Vieillot, Muls. Hist. Nat. Ois. Mou., 1876, t. iii., p. 230.

Habitat.—Brazil.

Male.—Forehead, line under the eyes and ear-coverts metallic grass-green. Upperside bronzy-green. Rump dark purple crossed by a narrow pale rufous band. Throat dark glossy green, the long feathers on the sides tipped white. Breast and abdomen rufous-white. Flanks brown with bronze reflections. Uppertail-coverts reddish-brown. Tail bronzy-brown tipped with rufous-gray. Wings purplish-black. Bill black.

Total length, $3\frac{1}{4}$ in. Wing, $1\frac{3}{4}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{1}{2}$.

Female.—Upperside greenish-bronze. Rump and line across as in male. Chin, line under the eyes and flanks buff. Breast and abdomen black spotted with buff. A white patch near the thigh as in the male. Tail bronzy-green at base, changing into dark bronzy-brown, tipped with grayish-buff.

54. *LOPHORNIS STICTOLOPHUS*, Salv. and Elliott Ibis., 1873, p. 280.

Bellatrix reginæ, Reich. Aufz der Col., 1853, p. 12.

Telamon stictolophus, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 201.

Spangled Coquette, Gould. Mon. Troch. vol. iii., p. 122.

Le Telamon à huppe étroite, Muls. Hist. Nat. Ois. Mou., 1876., vol. iii., p. 202.

Habitat.—Columbia, Venezuela, Ecuador.

Male.—Crest broad, dark reddish buff, each feather tipped with a green spot, the spots commencing in the centre of the crown. Upperside shining-green, reddish near the yellowish-white band crossing the rump. Rump and uppertail-coverts reddish-brown. Throat metallic-green, beneath which is a spot of white in the centre. Underside light shining-green, rufous in the centre of abdomen. Undertail-coverts buff. Tail brownish-chestnut, external feathers margined and tipped with bronzy-green. Wings purplish-brown. Bill flesh color with brown tips.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{3}{8}$.

Female.—Head deep buff. Upperside bronzy-green. Rump bronzy-brown crossed by a band of pale buff. Throat pale buff spotted with blackish-brown. Breast and flanks bronzy-green.

Abdomen rufous. Tail buff with a broad subterminal blackish bar.

It is a rare species.

55. *LOPHORNIS DELATTREI*, Less. Rev. Zool., 1839, p. 19.

Mellisuga delattrei, Gray. Gen. Birds, vol. i., p. 113.

Telamon delattrei, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 219.

Delattre's Coquette, Gould. Mon. Troch., vol. iii., p. 121.

Le Telamon de Delattre, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 220.

Habitat.—Veragua, Panama and Columbia.

Male.—Differs only from *L. stictolophus*, by the green of the throat, which is lighter, the internal colour of tail which is entirely chestnut, and chiefly by the form of the crest which is pale rufous, and composed of graduated lengthened feathers very narrow and tipped with a very diminutive green spot, scarcely visible. Rest of plumage like the preceding species.

Total length, 3 in. Wing, $1\frac{1}{2}$. Tail, $1\frac{1}{4}$. Culmen, $\frac{3}{8}$.

Female.—Forehead light buff. Upperside bronzy-green. Rump reddish-bronze crossed by a band of white. Tail greenish-bronze with a broad subterminal purplish-black bar, tipped buff. Throat black, beneath which is a small whitish spot. Breast, abdomen and flanks bronzy-green. Undertail-coverts buff. Tail buff, with a central bar blackish-bronze.

Young male is very much like the female, but the chin is rufous and the throat spotted with green metallic feathers.

I have several specimens of both sexes of this species from Veragua, Panama, and Bogota, Columbia.

It was discovered by Delattre in Columbia, and dedicated to him by his friend Mr. Lesson, the well-known ornithological author.

56. *LOPHORNIS REGULUS*, Gould. P.Z.S., 1847, p. 89.

Mellisuga regulus, Gray, Gen. Birds, vol. i., p. 113.

Lophornis lophotes, Gould. Int. Troch., 1861, p. 83.

Great Crested Croquette, Gould. Mon. Troch., vol. iii., p. 120.

Le Lophornis à grande huppe.

Habitat.—Bolivia.

This species resembles very much to *L. delattrei*, but can be easily recognised by its crest which is much wider and shorter. Besides, the green spots on tips of crest-feathers are much larger. The green of the throat is darker and more brilliant; the line crossing the rump is pure white, and the bill is longer.

Total length, $2\frac{3}{4}$ in. Wing, $1\frac{6}{8}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{1}{2}$.

In my opinion, it is a very good species, quite easy to distinguish from *L. delattrei*. It is rare.

The specimens which I have in my collection, were collected in Bolivia by the celebrated explorer Buckley.

GENUS XIX. **Gouldia**, Bon. Compt. Rend., 1850, p. 31.

Popelaria, Reich. Aufz. der Col., 1853, p. 12.

Gouldomyia, Bon. Rev. and Mag. Zool., 1854, p. 257.

Prymnacantha, Cab. and Hein. Mus. Hein., 1860., t. iii., p. 64.

Tricolopha, Heine. Journ. fur Ornith., 1863, p. 209.

Mythinia, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 235.

TYPE: *T. langsdorffi*, Vieillot.

Bill about as long as the head. Rectrices lengthened, stiff, graduating to a fine point. Forehead ornamented with metalling feathers forming a sort of crest. Throat metallic. A white band across the rump as all the other species of the family, a tuft of white feathers on side of flanks over the thigh. Sexes unlike.

Habitat.—Veragua, Columbia, Ecuador, Peru, Bolivia, and Brazil.

57. GOULDIA LANGSDORFFI, Bonnat and Vieill. Ency. Méth., 1794, vol. ii., p. 574.

Orthorhynchus langsdorffi, Less. Man. Ornith., 1828., t. ii., p. 77.

Ornismya langsdorffi, Less. Ois. Mou., 1829, p. 102.

Colibri hirundinaceus, Spix. Av. Bras., 1824, vol. i., p. 80.

Mellisuga langsdorffi, Bon. Conspl. Av., 1850, vol. i., p. 86.

Prymnacantha langsdorffi, Cab. and Hein. Mus. Hein., 1860, t. iii., p. 64.

Langsdorff's Thorn-tail, Gould. Mon. Troch., vol. iii., p. 127.

Le Prymnacanthe de Langsdorff, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 230.

Habitat.—Brazil.

Male.—Crown throat and breast glittering metallic grass-green, bounded beneath by a line of fiery-red. Upperside golden-green, with a white band crossing the rump. Uppertail-coverts bronzy-green. Lower part of breast and centre of abdomen black. Flanks and rest of underside greenish-bronze washed with gray. Median rectrices steel-blue with white shafts, lateral steel-blue at base then brownish-gray, with the points slightly darker. Wings purple-brown. Bill black.

Total length, 5-in. Wing, $1\frac{1}{2}$. Tail, 3. Culmen, $\frac{1}{2}$.

Female.—Upperside golden-green, darker on head. Rump crossed by a white band. Chin and centre of throat black spotted white, a white line from the bill to the throat. Throat whitish spotted with metallic-green. Lower part of breast and centre of abdomen black, rest of abdomen white. Flanks golden-green washed with white. Median rectrices steel-blue tipped with gray, lateral bronze, with a subterminal bluish-black bar and gray tips.

Total length, $4\frac{1}{2}$ -in. Wing, $1\frac{1}{2}$. Tail, $2\frac{6}{8}$. Culmen, $\frac{1}{2}$.

This very fine species was dedicated to Baron de Langsdorff by Vieillot.

58. GOULDIA MELANOSTERNUM, Gould. Ann. and Mag. Nat. Hist., 1868, p. 323.

Black bellied Thorn-tail.

Le Prymnacanthe à ventre noir.

Habitat.—Ecuador and Peru.

Male.—This species is only distinguishable from the preceding by all the top of head, which is metallic grass-green, and the line under the breast, which is golden instead of fiery red.

The specimens which I have of this rare species were collected by Messrs. Hauxwell in Peru, and Buckley in Ecuador.

59. GOULDIA POPELAIREI, Du. Bus. Esquiss. Ornith., 1845, p. 6.

Mellisuga popelairei, Gray, Gen. of Birds, vol. i., p. 113.

Popelairia tricholopha, Reich. Aufz. der Col., 1853, p. 12.

Prymnacantha popelairei, Cab. and Hein. Mus. Hein., 1860, t. iii., p. 64.

Tricolopha popelairei, Heine. Journ. fur Ornith., 1863, p. 209.

Popelaire's Thorn-tail, Gould. Mon. Troch., vol. iii., p. 127.

Le Tricolophe de Popelaire, Muls. Hist. Nat. Ois. Mou., 1876, t. iii., p. 236.

Habitat.—Columbia, Ecuador, Peru.

Male.—Head and throat metallic grass-green. Several long black hair-like feathers extending beyond the crest, the two middle ones reaching the tail. Back and uppertail-coverts bronzy-green. Rump greenish-black, crossed by a white band, bluish-black underneath the band. Breast and abdomen black with bluish reflections. Flanks bronzy-green passing to brownish gray. Tail, steel-blue, with conspicuous white shafts, especially on the underside. Undertail-coverts whitish. Thighs rufous. Bill black.

Total length, $4\frac{5}{8}$ in. Wing, $1\frac{1}{2}$. Tail, $2\frac{6}{8}$. Culmen, $\frac{1}{2}$.

Female.—Upperside, sides of breast, flanks and uppertail-coverts golden-green. White band across the rump, underneath bluish-black. Chin, breast, and centre of abdomen dark brown, nearly black. Line on each side of neck white. Tail short, gray at base, then steel-blue with tips white. Wings purple-brown. Thighs rufous. Bill black.

This very peculiar species was discovered in Perou by Baron Popelaire de Terloo, and was dedicated to him by Du-Bus. The type is in the Museum of Bruxelles.

All my specimens are from Columbia and Ecuador.

60. GOULDIA CONVERSI, Bourc. and Muls. Ann. Soc. Agr. Lyon, 1846, p. 313.

Mellisuga conversi, Gray, Gen. Birds, vol. i., p. 113.

Prymnacantha conversi, Cab. and Hein. Mus. Hein., 1860, t. iii., p. 65.

Conver's Thorntail, Gould. Mon. Troch., vol. iii., p. 129.

Le Prymnacanthe de Convers, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 243.

Gouldia aequatorialis, Berlepsch and Tacz, P.Z.S., 1883, p. 567.

Habitat.—Veragua, Columbia, Ecuador.

Male.—Head and throat shining dark green, elongated feathers beneath the throat, centre of breast bright green with bluish reflections, sometimes metallic blue. Upperside

dark bronze-green. Rump underneath the white band, sometimes dark purple-brown, sometimes coppery. Tail steel blue, with shafts pale brown upperside, and showy white underside. Wings purplish-brown. Bill black.

Total length, 4 in. Wing, $1\frac{5}{8}$. Tail, $2\frac{1}{4}$. Culmen, $\frac{1}{2}$.

Female.—Upperside golden-green. Rump and white band as in male. Throat and centre of abdomen black. A white line under the eyes from the bill to the breast. Breast blackish washed with metallic green feathers. Flanks golden-green. Two large white patches between the lower part of abdomen and flanks. Tail short, upperside steel blue with white tips, underside gray at base, then steel blue with white tips. Bill black.

I have united *Gouldia aequatorialis*, Berlepsch and Tacz, with this species, because the characters given by these authors are not peculiar to the specimens from Ecuador. I have several specimens from Veragua and from Columbia coloured exactly the same as those from Ecuador.

This species was discovered by Mr. Convers, a French naturalist, established years ago in Bogota. It was dedicated to him by Messrs. Bourcier and Mulsant.

61*. *GOULDIA LŒTITIAE*, Bourc. Ann. Soc. Lyon, 1852, p. 143.

Prymnacantha lœtitiae, Cab. and Hein. Mus Hein., 1860, t. iii, p. 64.

Mythinia lœtitiae, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 245.

Letitia's Thorntail, Gould. Mon. Troch., vol. iii., p. 130.

La Mythinie de Letitia, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 246.

Habitat.—Bolivia.

Male.—Head and throat glittering pale grass green. Upper-surface coppery-brown; band across the rump white. A white patch beneath the green of the throat. Upper parts of abdomen and flanks bronzy-green. Lower portion of belly gray. Upper tail-coverts red changing to golden-green. Tail black, shafts rufous. Undertail-coverts golden-green bordered with black. Bill maxilla black, mandible flesh-color at base, rest black.

Total length, $3\frac{5}{8}$ in. Wing, $1\frac{1}{4}$. Tail, $1\frac{1}{2}$. Culmen, $\frac{3}{8}$.

Female.—Unknown

The above description was taken from Elliot's Classification and Synopsis of the Trochilidae.

GENUS XX. **Discura**, Reich. Aufz der Colib, 1853, p. 8.

Platurus, Less. Ois. Mouch, 1829, p. 22.

Oreatus, Gould, P.Z.S., 1846, p. 86.

Discosura, Bon. Compt. Rend., 1850, vol. i., p. 84.

TYPE; *T. longicauda*, Gmelin.

Bill short, straight, converging near the tip to a slender point. Male brilliantly coloured on the forehead and throat. White or rufous band crossing the rump as in all the other species of the family. Tail deeply forked; the outermost rectrices bare of webs near their tips, and terminating in a spatula. Sexes unlike.

Habitat.—Guiana, Brazil.

62. **DISCURA LONGICAUDA**, Gmel. Syst. Nat. 1788, vol. i., p. 498.

Trochilus platurus, Lath. Ind. Ornith, 1790, vol. i., p. 317.

Mellisuga platura, Steph. Gen. Zool., vol. xiv., p. 242.

Trochilus bilophus, Tem. Pl. Col., No. 18, fig. 3.

Ornismya platura, Less. Ois. Mou., 1829, p. 136.

Oreatus ligonicaudus, Gould, P.Z.S., 1846, p. 86.

Discosura longicauda, Bon. Conspl. Gen. Av., 1850, vol. i., p. 84.

Discura, Sp. Salv. Ibis., 1885, p. 434.

Racket Tail, Gould. Mon. Troch., vol. iii., p. 126.

La Discure à raquettes, Muls. Hist. Nat. Ois. Mou., 1876, vol. iii., p. 250.

Habitat.—Guiana, Brazil.

Male.—Head, throat and breast shining grass-green, a small black spot on chin. Upperside bronzy-green, rump crossed by a white band. In the specimens from Guiana, this band is pale buff. Flanks golden-green, a few feathers beneath the metallic green feathers of breast, silvery-green. Abdomen dark brown, nearly black, washed with golden feathers, lower part and undertail-coverts pale buff with white patch near the thigh. Tail purplish-brown with buff shafts. Shaft of outermost ones bare of webs near the tip, and terminating with a black spatula.

Wings purple brown. Bill black. In some of my specimens the upperside is reddish golden.

Total length, 4-in. Wing, $1\frac{3}{4}$. Tail, 2. Culmen, $\frac{1}{2}$.

Female.—Upperside greenish-bronze. A white band across the rump. Throat white, spotted dark brown, centre black. Breast, flanks and lower part of abdomen whitish, tinged with green feathers, centre of abdomen blackish-brown washed with golden feathers. Tail short, dark gray, tipped with purplish-black and edged with white. Bill black. A small buff line at base of bill.

Total length 3 in.

There is a slight difference of coloration between the specimens from Guiana and Brazil; but I don't think it is enough to separate them.

FAMILY III. CEPHALELOPIDAE.

OR FAMILY OF CROWNED HUMMING BIRDS.

Body moderate, sometimes very minute as in the genus *Microchera*. Bill short slender and straight, serrated at tips in the genus *Chrysolampis*. Feathers projecting on the culmen, especially so in the genera *Bellona* and *Chrysolampis*, in which they cover about half the length of the maxilla. Head crowned and brilliantly coloured. In the genus *Cephalolepis* one or two black elongated feathers projecting from the crown getting beyond half the length of the body. In some genera, the throat is also brilliantly coloured. In the extraordinary and marvellous genus *Loddigesia* the outermost rectrices terminates suddenly with a broad rounded spatule, and the two posteriors undertail-coverts are very long, narrow, and pointed, longer than the whole body. Wings long, nearly reaching the end of tail. Tail rounded, excepting in the genus *Loddigesia*. Sexes unlike.

TYPE: *Cephalolepis*, Lodd, P.Z.S., 1830, p. 12.

GENUS XXI. *Cephalolepis*, Lodd, P.Z.S., 1830, p. 12.

Smaragdites, Reich. Syst. Av. Nat., 1849, p. 40.

Orthorhynchus, Burm. Th. Bras., 1856.

TYPE: *T. delalandi*, Vieillot.

Bill straight, mandible curved upwards at tip. Nostrils hidden. Head crested, from the centre, spread one or two long narrow

feathers nearly reaching the upper part of tail. Wings long. Feathers of tail, even in length, rounded, and lateral tipped white in both sexes. Tarsi bare. Sexes unlike.

Habitat.—Brazil.

67. CEPHALOLEPIS DELALANDII, Vieill. Nouv. Dict. Hist. Nat., t. xxii., p. 427.

Trochilus versicolor, Vieill. Nouv. Dict. Hist. Nat., t. xxiii., p. 430.

Mellisuga delalandi, Gray, Gen. of Birds.

Cephalolepis lalandii, Bon. Conspl. Gen. Av., 1850, vol. i., p. 83.

Orthorhynchus delalandii, Burm. Th. Bras., 1860, pt. ii., p. 351.

Cephalolepis leski, Von. Pelz. Orn. Bras., 1868, p. 58.

Delalande's Plover-Crest, Gould. Mon. Troch., vol. iv., p. 208.

Le Cephalolepis de Delalande, Muls. Hist. Nat. Ois. Mou., 1876, t. iii., p. 188.

Habitat.—Brazil.

Male.—Head and crest metallic dark green with golden reflections on forehead, the two long feathers of crest black. Upperside shining bronzy-green. Median rectrices bronze-green, lateral bronze-green at base, then bluish-black with white tips. A white spot behind the eyes. Chin dark gray. Centre of throat, breast and abdomen shining violet-blue. Rest of underside dark gray. Undertail-coverts whitish gray, darker in centre of feathers, and sometimes washed with green. Wings purplish brown. Bill black.

Total length, $3\frac{3}{8}$ in. Wing, 2. Tail, $1\frac{5}{8}$. Culmen, $\frac{9}{16}$.

Female.—Upperside bronzy-green. Underside gray. Tail like that of male. Bill black.

Same size as male.

This beautiful species was dedicated by Vieillot to the celebrated naturalist Delalande, who probably is the discoverer of the species.

It is common in Brazil.

68. CEPHALOLEPIS LODDIGESI, Gould. P.Z.S., 1830, p. 12.

Trochilus opisthocomus, Licht. Nordm. Enum. Reise, 1835.

Mellisuga loddigesii, Gray. Gen. Birds, vol. i., p. 114.

Cephalepis loddigesii, Bon. Conspl. Gen. Av., 1850, vol. i., p. 83.

Orthorhynchus loddigesii, Reich. Troch. Enum., 1855, p. 9.

Loddiges' Plover Crest, Gould. Mon. Troch., vol. vi., p. 209.

Le Cephallepis de Loddiges, Muls. Hist. Nat. Ois. Mou., 1876, t. iii., p. 192.

Habitat.—South Brazil.

Male.—Head and crest metallic prussian-blue, the long feathers of crest black. Upperside bronze-green. White spot behind the eye. Median rectrices bronze-green, lateral bronze-green at base, then black with large white tips. Chin and sides of the neck brownish-gray. Flanks and undertail-coverts brownish-grey washed with green. Rest of underside dark shining blue. Wings dark brown. Feet flesh color. Bill black.

Total length, $3\frac{5}{8}$ in. Wing, 2. Tail, $1\frac{4}{8}$. Culmen, $\frac{5}{8}$.

Female.—Upperside bronze-green. Underside gray. Rest like male.

This rare species was dedicated by Gould to Mr. George Loddiges, the celebrated botanist, who made, during his life-time, one of the best collections of humming birds of that epoch.

One of my specimens I found in the collection of Costa de Beauregard, another was collected by H. von Hering, at Taquara do Mundo novo, Prov., Rio Grande, Brazil.

GENUS XXII. **Loddigesia**, Gould, Mon. Troch., vol. iii.

Loddigiornis, Bon. Compt. Rend., 1850, p. 381.

Mulsantia, Reich. Aufz der Colib, 1853, p. 12.

Thaumantoessa, Hein. Journ. fur Ornith., 1863, p. 209.

TYPE : *T. mirabilis*, Bourcier.

Bill straight, longer than the head. Wings diminutive, primaries rounded at the tip, tail feathers on each side very much prolonged and terminating in a large spatula, median and lateral rectrices excessively short, the two posterior undertail-coverts very long and pointed.

Habitat.—Peru.

69*. LODDIGESIA MIRABILIS, Bourcier, P.Z.S., 1847, p. 42.

Mulsantia mirabilis, Bon. Conspl. Gen. Av., 1850, vol. i., p. 80.

Thaumatoëssa mirabilis, Heine. Journ. fur Ornith., 1863, p. 210.

Loddigesia mirabilis, Tacz., P.Z.S., 1881, p. 827.

Marvellous Humming Bird, Gould, Mon. Troch., vol. iii., p. 161.

La Loddigésie admirable, Muls. Hist. Nat. Ois. Mou., 1877, t. iii., p. 252.

Habitat.—Chachapoyas, Peru.

Male.—Crown of the head brilliant blue, neck scapularies, back wing and tail-coverts golden-green; on the throat a gorget of very brilliant green tinged with blue in the centre, and bounded on each side by a narrow band of coppery red; sides of the breast and abdomen white; flanks golden-green. Median and lateral rectrices very short, dark green; outermost ones very long about three times the length of the body, very narrow until near the end where they terminate suddenly with a broad spatule of a dark blue colour crossed with darker lines, very distinct in certain lights. The spatules are as broad as long, wider in the middle and curved in half a circle, in nearly all their length, so that in their natural position they cross twice one another. Undertail-coverts green margined with white. They are in general long, but the two posteriors are very long, more so than the body, and pointed. These are dark bronzy-green on their basal half passing to dark blue with tips whitish; bill and feet black.

Total length, 147 mill. Wing, 40. Tail, 125. Culmen, 21. Posterior undertail-coverts, 80. Width of spatule, 30.

Female.—Upperside less golden than the male. Head grayish-bronze. Underside white washed with dove color, throat spotted with green, flanks and abdomen golden-green. Median rectrices brilliant green, lateral green at base passing to bluish-black at tips; outermost grayish passing to blue on spatula, which is oblong. Undertail-coverts dove colour, the posterior ones reach three-fourths of the outermost rectrices, and are pure white.

This most remarkable species was discovered in 1835, at Chachapoyas (Peru), by Mr Matthews, who sent it to Mr Loddiges, in which collection it is still. It is the type of the species.

For many years it remained unique, and Gould did his utmost to procure another specimen; but he failed and died in 1881, before he could secure the species.

Shortly after his death, MM^{rs} Jelski et Stolzmann, who were collecting objects of natural history for the Museum of Warsaw, had the good fortune to rediscover the species and to secure about fifteen specimens of both sexes, which they sent to Europe. The British Museum possesses three specimens, two adults, male and female, and one young, which I believe were collected by the last mentioned naturalists.

It is still a very rare species, and one of my desiderata.

LODDIGESIA, sp. Boucard Troch. du Mex. (Ann. Soc. Linn., Lyon, 1875).

Habitat. — San-Andres Tuxtla.

In August 1856, when residing in San-Andres Tuxtla Mexico, I saw a bird probably belonging to this extraordinary genus. It was near sunset, and unfortunately I had no gun at the time. I came at the same place several times on purpose to obtain that bird; but I was never able to see it again.

I call the attention of the mexican Naturalists on the importance of the discovery of that bird, and I ask as a favour that if discovered one day or another, that the species should be called after me.

GENUS XXIII. — **KLAIS**, Reich. Aufz. der Col., 1853, p. 43.

BASILINNA, Cab and Hein. Mus. Hein. 1860, t. III, p. 44.

GUIMETIA, Bon. Ann. Sc. Nat., 1854, p. 437.

TYPE : *T. guimeti*, Bourcier.

Bill straight, little longer than the head, wide at base, graduating to a point. Feathers of forehead projecting on the culmen. Throat and crown brilliantly coloured. Wings long. Tarsi clothed. Size minute. Sexes unlike.

Habitat. — Guatemala Costa-Rica, Veragua, Panama, Venezuela and Columbia.

70. KLAIS GUIMETI, Bourc and Muls. Ann. Soc. d'Agric., Lyon, 1843, p. 88.

Hylocharis guimeti, Gray. Gen. Birds, vol. I, p. 114.

Myabeillea guimeti, Bon. Rev. and Mag. Zool., 1854, p. 253.

Basilinna guimeti, Cab and Hein. Mus. Hein, 1860, t. III, p. 44.

Klais guimeti, Sclat et Salv. Nomenclator, 1873, p. 88.
Guimet's Flutterer, Gould. Mon. Troch., vol. IV, p. 210.
Le Klais de Guimet, Muls. Hist. Nat. Ois. mou., 1876,
vol. III, p. 139.

Habitat. — Columbia.

Male. — Crown and throat metallic purplish blue. Upperside bronzy-green. Underside shining dark green washed with dark gray, slightly golden on flanks. Undertail-coverts pale bronze edged with gray. Median rectrices bronze-green, lateral bronze-green at base, then blackish, with brown tips, outermost ones tipped gray. Wings purplish-brown. A white spot behind the eye. Bill black.

Total length, 3 in.: Wing, 2. Tail, $1\frac{3}{8}$. Culmen, $\frac{1}{2}$.

Female. Upperside bronzy-green. Underside gray. Same size as male.

This uncommon species was dedicated by MM. Bourcier and Mulsant to M^r Jean-Baptiste Guimet, of Lyon, the inventor of the colour, well known as *Blue Guimet*.

74. KLAIS MERRITTI, Lawr. Ann. N.-Y. Lyc. Nat. Hist., 1860,
vol. III, p. 440.

Habitat. — Guatema

Male — The principal differences between this species and

Mac. — The principal differences between this species and the preceding consists in the color of the throat and crown which is metallic blue without any purple in it; it is lighter on the crown and brilliantly metallic. The general colour of the underside is of a much lighter gray.

Total length, 3 $\frac{3}{8}$ in.: Wing, 2. Tail, 1 $\frac{3}{8}$. Culmen, $\frac{1}{2}$.

Female. — Centre of crown metallic greenish-blue. Upperside shining golden-green. Underside pale gray. Median rectrices bronze-green; lateral bronze-green at base, then bluish-black with white tips. Wings dark brown. Bill black.

Same size as male.

This description is taken from a female killed by me at Navarro (Costa-Rica), in May 1877.

It is a rare species. My specimens are from *Guatemala*, *Costa Rica*, *Veragua* and *Panama*.

GENUS XXIV. **Anthocephala**, Cab. Mus. Hein, 1860,
t. III, p. 72.

TYPE : *T. floriceps*, Gould.

Bill straight, pointed, long as the head. Wings long, pointed.
Tail rounded.

Habitat. — Columbia.

72. ANTHOCEPHALA FLORICEPS, Gould. P. Z. S., 1853, p. 62.

Metallura floriceps, Reich. Aufz. der Col., 1853, p. 8.*Adelomyia floriceps*, Gould. Mon. Troch., vol. III, p. 202.*Blossom Crown*, Gould. Mon. Troch., vol. III, p. 202.*L'Antocephale à tête rose*, Muls. Hist. Nat. Ois. Mou., 1876, t. III, p. 426.*Habitat.* — Columbia.

Male. — Forehead buffy-white, passing to a beautiful deep peach-blossom hue on the crown. Throat gray, passing into the rufous of the abdomen; Wings purplish-brown. Middle tail feathers bronzy, lateral bronzy at the base passing into purplish-black and largely tipped with buff. Bill black; feet apparently light brown. « Gould. Mon. Troch. »

This extremely rare species was probably discovered in Columbia, by Linden.

GENUS XXV. **Microchera**, Gould. Int. Troch., 1861, p. 82.*TYPE* : *M. albocoronata*, Gould.

Size minute. Bill long as the head, slender, straight. Crown snow white. Feathers of forehead projecting on the culmen. Nostrils covered. Wings long, primaries rather broad. Tail short, square. Tarsi clothed. Sexes unlike.

Habitat. — Costa-Rica, Nicaragua, Veragua.

73. MICROCHERA ALBOCORONATA, Lawr. Ann. N.-Y. Lyc. Nat. Hist., 1855, vol. VI, p. 137.

Snow Cap, Gould. Mon. Troch., vol. II, p. 416.*La Microchère à couronne blanche*, Muls. Hist. Nat. Ois. Mou., 1876, vol. III, p. 135.*Habitat.* — Veragua (Columbia).

Male. — Crown silky snow-white. Neck purple-black. Rest of upperside dark shining purple with black reflections. Throat greenish-black. Breast and flanks dark purplish-black. Abdomen black. Undertail coverts white. Median rectrices dark-bronze; lateral white at base, then bluish-black with a narrow white band at tips. Wings purple. Maxilla black. Mandible brownish.

Total length, $2\frac{3}{8}$ in.: Wings, $1\frac{5}{8}$. Tail, $\frac{7}{8}$. Culmen, $\frac{3}{8}$.

Female. — Upperside bronzy-green. Underside white. Same size as male.

This beautiful species is very rare. I have only one male specimen collected by Arce, in Veragua. It was discovered by Doctor J.-K. Meritt.

74. MICROCHERA PARVIROSTRIS, Lawr. Ann. N.-Y. Lyc. Nat. Hist., 1870, p. 422.

Purple Snow Cap, Gould. Mon. Troch. Suppl., p. 40.

La *Microchère à petit bec*, Muls. Hist. Nat. Ois. Mou., 1876, vol. III, p. 137.

Habitat. — Costa-Rica, Nicaragua.

Male. — Crown silky snow-white. Upperside shining reddish-purple. Throat, breast, abdomen and flanks, dark reddish-purple, slightly greenish on chin. Undertail-coverts white. Median rectrices light bronze, blackish at tips; lateral white at base, rest brownish black edged with white. Wings purple. Bill black.

Total length, $2\frac{1}{2}$ in.: Wings, $1\frac{5}{8}$. Tail, $\frac{7}{8}$. Culmen, $\frac{1}{2}$.

Female. — Upperside bronzy-green. Underside white. Middle rectrices bronze-green, rest white with a subterminal black bar. Bill black.

It is a very rare species. I have only two specimens, one collected by Mr. Belt at Chontales (Nicaragua), and the other collected by Mr. Zeledon at Limon (Costa-Rica).

GENUS XXVI. **Bellona**, Muls and Verr. Class. Troch., 1865, p. 75.

TYPE : *T. cristatus*, Linné.

Bill straight about as long as the head. Feathers of the forehead covering one half the length of culmen. Nostrils hidden. Head covered with a broad pointed crest. Underside dull. Wings long. Tail short and rounded. Feet small. Tarsi naked. Sexes unlike.

Habitat. — West Indies.

75. **BELLONA CRISTATA**, Linné. Syst. Nat., 1766, vol. I, p. 192.

Trochilus puniceus, Gmel. Syst. Nat., 1788, t. I, p. 497.

Mellisuga cristata, Gray. Gen. Birds., vol. I, p. 113.

L'Oiseau mouche huppé, Less. Ois. Mou., 1829, p. 113.

Ornismya cristata, Less. Troch., 1831, p. 20.

Orthorhynchus cristatus, Bon. Conspl. Gen. Av., 1850, p. 83.

Orthorhynchus ornatus, Gould. Mon. Troch., vol. IV, p. 206.

Blue Crest, Gould. Mon. Troch., vol. IV, p. 206.

La *Bellone à huppe bleue*, Muls. Hist. Nat. Ois. Mou., 1876, t. III, p. 194.

Habitat. — Saint-Vincent, Barbadoes, Martinique, Grenada.

Male. — Forehead and crown metallic golden-green changing into deep purplish blue on the lengthened crest feathers, which in some specimens are amply furnished and extend to the middle of back. Upperside dark green, nearly black on sides and back of crest. Tail purplish-black with a greenish tinge on

webs of median rectrices. Throat smoky-brown. Underside smoky black. Wings purplish-brown. Bill black.

Total length, $3\frac{2}{8}$ in.: Wings, $1\frac{7}{8}$. Tail, $1\frac{3}{8}$. Culmen, $\frac{5}{8}$.

Female. — Upperside dark bronzy-green. Underside white, grayish on sides of breast and flanks. Median rectrices bronzy-green; lateral bronze at base on external web, then bluish black with white tips, outermost ones grey at base on external web, then bluish black, with large white tips. Wings purplish-black. Bill black. Same size as male.

This species is abundant in the West Indies and I believe that the *Bellona ornata* of Gould is only a variation of plumage with more blue on the crest.

I have received a fine series of both sexes of this species from Grenada, collected by Mr Wells. Some have more or less blue on the back part of crest; but in all the specimens it is the same purplish-blue.

76. — *BELLONA SUPERBA*. Boucard. H. Bird, vol. I, p. 43.

Blue and green Crest.

La Bellone superbe.

Habitat. — Saint-Vincent?

Male. — Forehead and crest metallic golden-green; the few elongated feathers of crest which are forming a point, metallic blue without any purple in it. Upperside dark bronzy-green, not so dark as the preceding species, but just a little black under the green of the crest. Tail purplish-black. Throat smoky brown, remainder black.

Total length, $3\frac{1}{2}$ in.: Wing, $1\frac{3}{4}$. Tail, 1. Culmen, $\frac{1}{2}$.

Female. — Unknown, but probably like the preceding species. What I described in the Humming Bird was probably a young male. The description runs as follows:

Forehead dark-green. Upperside dark golden-green appearing black on neck. Chin gray, remainder dark gray, nearly black. Wings purplish-brown. Tail purplish-black, with gray tips on outermost feathers in some of my specimens.

Bill and feet black.

This species makes the passage between *B. cristata* and *B. exilis*; but is more closely allied to the latter species.

77 : *BELLONA EXILIS*, Gmel. Syst. Nat. 1788, p. 484.

Trochilus cristatellus, Lath. Ornith. Suppl. 1790. p. 39.

Mellisuga exilis, Gray. Gen. Birds, vol. I, p. 413.

Orthorhynchus chlorolophus, Bon. Conspl. Gen. Av. 1850, vol. I, p. 83.

Gilt Crest, Gould. Mon. Troch., vol. IV, p. 207.

La Bellone à huppe verte, Muls. Hist. Nat. Ois. Mou. 1876, t. III, p. 496.

Habitat. — Dominica, Sainte-Croix, Montserrat, Nevis and Martinica.

Male. — Forehead and crown metallic golden-green turning into grass-green on elongated feathers of crest. Upperside bronze-green darker on neck. Throat dark gray; remainder of underside dark brown with bronzy-green feathers on sides of breast and flanks. Median rectrices dark bronze-green, rest dark bluish-purple. Wings purple-brown. Bill and feet black.

Total length, $2\frac{3}{8}$ in.: Wings, 2, Tail, $1\frac{5}{8}$. Culmen, $\frac{5}{8}$.

Female. — Upperside bronzy-green. Underside smoky gray, lighter on throat, centre of breast, and abdomen. Median rectrices bronzy-green, lateral purplish, outermost with gray tips. Bill and feet black. Same size as male.

One of the specimens which I have in my collection, formerly in Riocour Collection, has on its label *O. chlorolophus*, Vieillot.

I think that many more species of this charming genus will be found when all the West Indies islands will be more thoroughly explored than what they have been up to the present time.

78. BELLONA EMIGRANS, Lawr. Ann. N.-Y. Lyc. Nat. Hist., vol. I, p. 50.

Blue and violet Crest.

La Bellone à huppe violette et bleue.

Habitat. — Venezuela? Grenada.

Male. — The basal half of the crest is of a shining emerald-green; the terminal half deep reddish-violet; the upper plumage is dark grass-green. Tail feathers blackish-purple; the two central ones washed with green; quills light purple. Throat smoky-gray; breast and abdomen smoky-black. Bill and feet black.

Total length, $3\frac{1}{4}$ in.: Wings, $1\frac{7}{8}$. Tail, $1\frac{1}{8}$. Culmen, $\frac{7}{16}$.

Female. — Without the brilliant crest. Underside whitish-gray. « Lawr, loc. cit. »

This species is closely allied to *O. cristatus* from Barbadoes; the two colors of the crest are equally divided in both, but they differ in shades of coloring; the green in this species is without the strong golden tinge existing in the other and the violet is rather deeper in color, which color it retains in all positions whereas in some lights that of *O. cristatus* is greenish, the upper plumage of *O. cristatus* is lighter and golden green. It is also smaller with a longer bill. They differ strongly in the ends of the tail feathers, these being obtusely pointed in the new species and rounded in the other. I have some specimens exactly like this description from Grenada.

GENUS XXVII. —**Chrysolampis**, Boié. Isis, 1831, p. 546.TYPE : *T. moschitus*, Linné.

Bill straight, long as the head. Feathers of the forehead projecting on the culmen and hinding the nostrils. Wings long nearly reaching the end of tail. Tail rounded. Rectrices of even size. Feet small. Tarsi bare. Head, throat and upper part of breast brilliantly coloured. Sexes unlike.

Habitat. — Brazil, Trinidad, Venezuela, Columbia and Guiana.

79. **CHRYsolampis moschitus**, L. Syst. Nat., 1766, vol. I, p. 492.

Trochilus carbunculus, Gmel. Syst. Nat., 1788, t. I, p. 498.

Ornismya moschitus, Less. Ois. Mou. 1829, p. 166.

Mellisuga moschita, Steph. Shaw. Gen. Zool., vol. XIV, p. 253.

Chrysolampis giglioli, Oustalet, le Naturaliste, 1885, p. 3.

Chrysolampis infumatus, Berl.

Chrysolampis moschitus Var., Boucard. H. Bird. vol. I, p. 26.

Ruby and Topaz, Gould. Mon. Troch. vol. VI, p. 204.

Le *Chysolampe Rubis-Topaze*, Muls. Hist. Nat. Ois. Mou., 1876, vol. II, p. 255.

Habitat. — Brazil, Trinidad, Venezuela, Guiana and Columbia.

Male. — Head metallic ruby-red. Upperside bronzy-brown, appearing black on sides of neck and upper part of back. Chin, throat and upper part of breast metallic topaz. Abdomen and flanks dark brown, nearly black round the breast. A line of white feathers on sides of flanks, and a tuft of white feathers on each side under the vent. Undertail-coverts rufous. Tail rufous with brownish black tips. Bill and feet black,

Total length, $3\frac{6}{8}$ in.: Wings, $2\frac{2}{8}$. Tail, $4\frac{1}{2}$. Culmen, $\frac{4}{8}$.

Female. — Upperside golden green. Underside grayish-white, washed with golden feathers on sides of breast and flanks. Median rectrices bronzy-green, lateral gray at base, then purplish-brown with white tips. Bill and feet black.

This species is very abundant in Brazil, Trinidad, Guiana, and Columbia.

Chrysolampis giglioli, Oustalet, was a made up bird fabricated in Colombia with half a specimen of *C. moschitus*, and the other half of *Florisuga mellivora*.

Chrysolampis infumatus, Berlepsch, can only be a dark coloured bird of *C. moschitus*, and I don't think it can stand as a species.

GENUS XXVIII. — **Eustephanus**, Reich. Syst. Av. Nat. 1840,
pl. 40.*Sephianoides*, Less. Int. Gen. et Syn. Gen. Av. 1850, p. 21.*Stephanoides*, Bon. Consp. Gen. Av. 1850, p. 82.*Thaumaste*, Reich. Aufz der Colib. 1853, p. 14.*Stokosiella*, Reich. Bon. Ann. Sc. nat. 1854, p. 38.TYPE : *T. galeritus*, Molina.

Bill short, straight, rather stout, subcylindrical, pointed, shorter than the head. Nostrils covered with feathers. Wings long nearly reaching the end of tail. Median rectrices shortest, remainder very slightly and gradually longer. Tarsi clothed. Sexes unlike.

Habitat. — Chili and Islands of Juan Fernandez.80. **EUSTEPHANUS GALERITUS**, Mol. Hist. Chili, p. 219.*Colibri du Chili*, Aud and Vieill Ois. Dor., t. I, p. 425.*Mellisuga kingi*, Vig. Zool. Journ., vol. III, p. 432.*Mellisuga galerita*, Gray, Gen. Birds, vol. I, p. 413.

Orthorhynchus sephanioides Less and Garn. Voy. Coquille, pl. 31.

Ornysmia sephanioides, d'Orb. and Lafr. Syn. Av., t. II, p. 29.*Trochilus forficatus*, Gould. Voy. Beagle 1841, pl III, p. 110.*Sephanoides kingi*, Gray. List Gen. Birds, p. 19.*Chilian Fire Crown*, Gould. Mon Troch., vol. IV p. 265.*Eustephane coiffé*, Muls. Hist. Nat. Ois. Mou. 1876, t. II, p. 247.*Habitat*. — Chili and Islands of Juan Fernandez.

Male. — Head metallic fiery-red. — Upperside dark bronzy-green, appearing black on neck in certain lights. Tail bronze-green. Throat white spotted with green. Tuft on thighs white. Undertail-coverts pale bronze-green edged, with buffy-white. Wings purplish. Bill black.

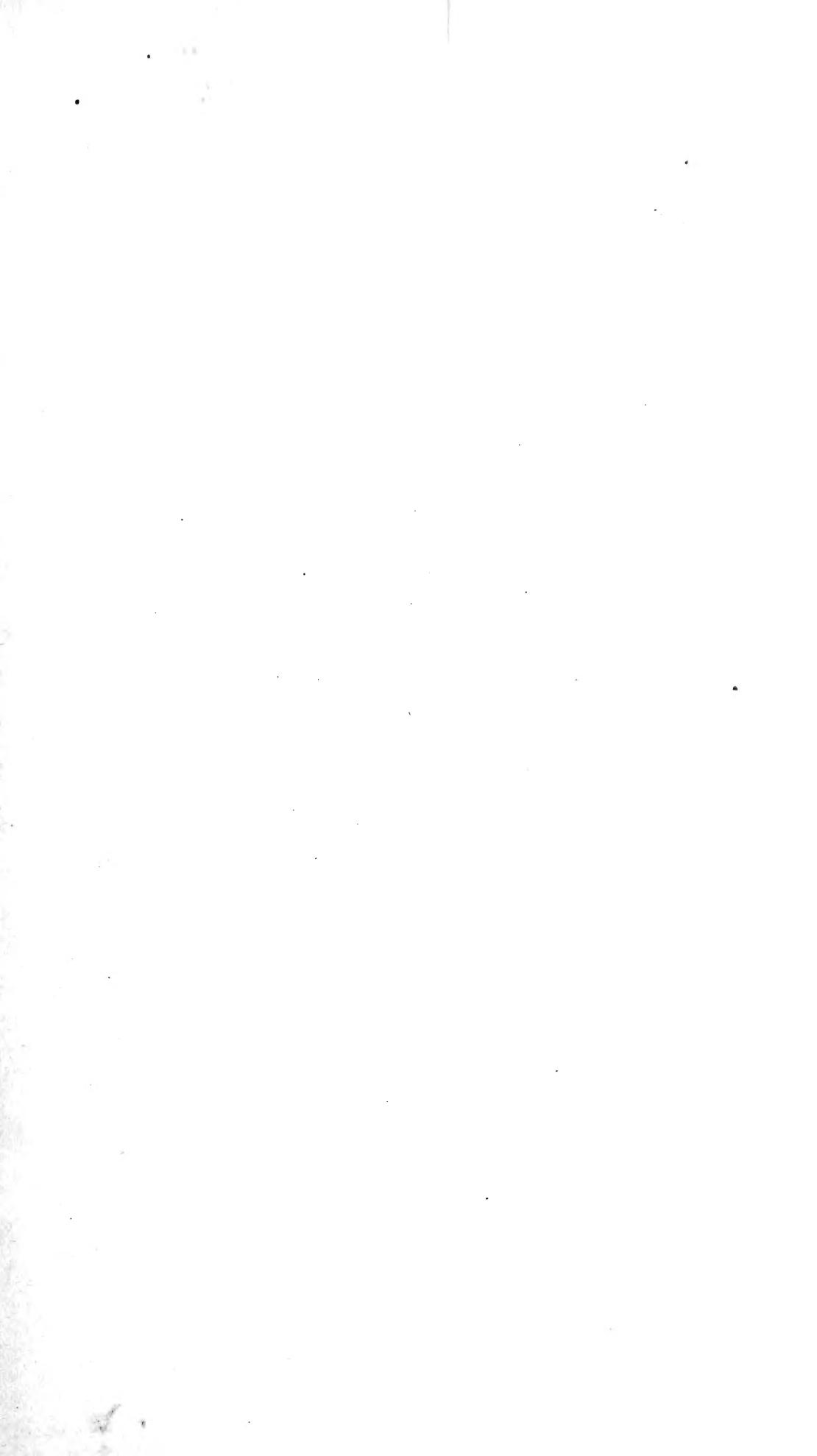
Total length, $4\frac{3}{8}$ in.: Wings, $2\frac{1}{2}$. Tail, $4\frac{6}{8}$. Culmen, $\frac{1}{2}$.

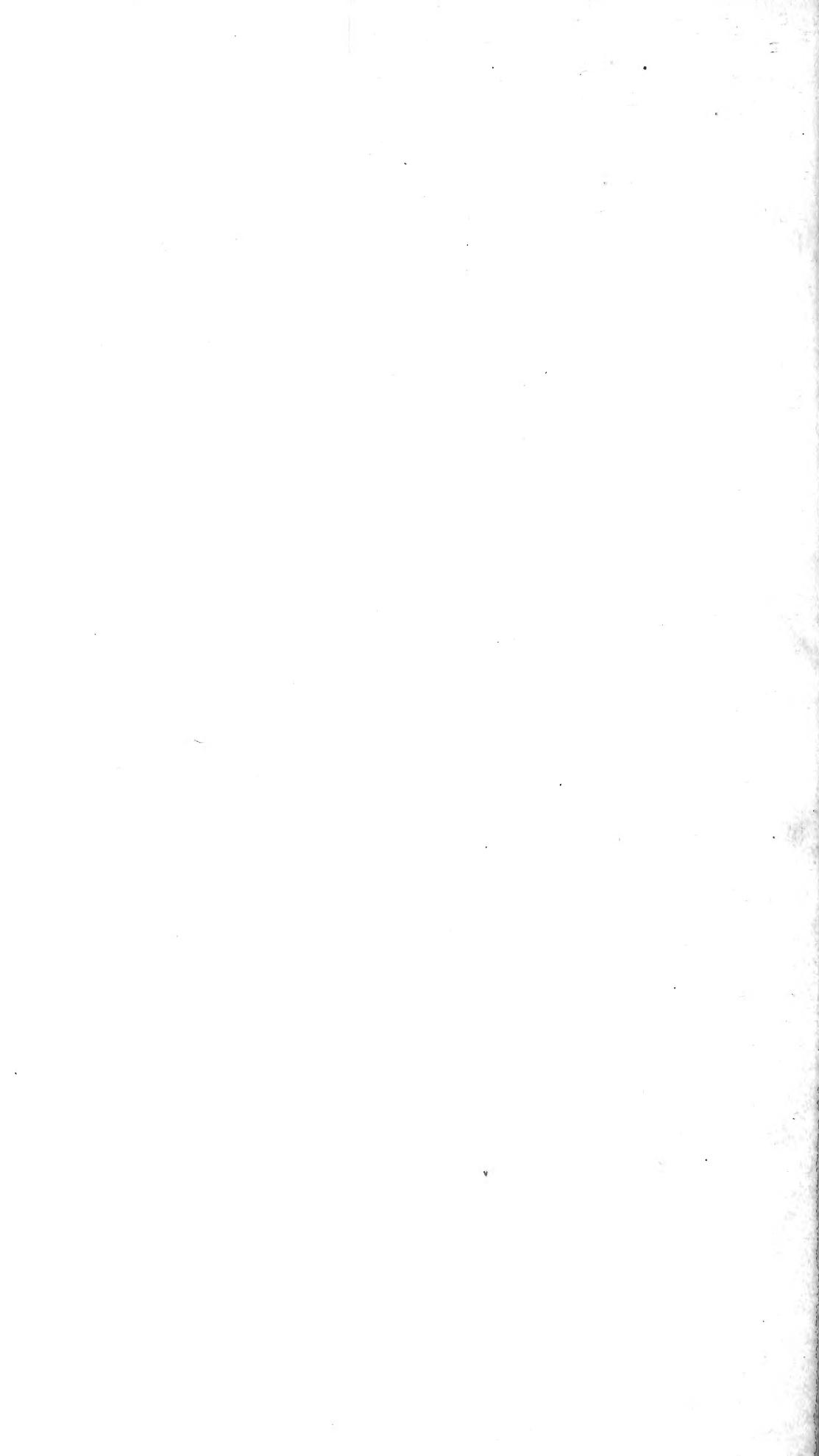
Female. — Upperside bronze-green, passing to shining green on uppertail coverts. Four median rectrices bronze-green, the two next with subterminal blackish bar and gray tips, outermost bronze-green at base passing to blackish on internal web, and gray on external web, tips gray. Underside like the male.

Total length, $4\frac{2}{8}$ in.: Wings, $2\frac{1}{2}$. Tail, $4\frac{6}{8}$. Culmen, $\frac{1}{2}$.

I have also a young male of this species with metallic silvery-green feathers on top of head.

My specimens of this species were collected near Valparaiso by M^r Reed.







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